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POLICY.

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This copy is not for sale. It is intended for more than one reader.
PLEASE READ IT AND PASS IT ALONG

Communist POW Treatment in Indochina

Bernard B. Fall

In the case of armed conflict not of an international character . . . each Party to the conflict shall be bound to apply, as a minimum, the following provisions:

(1) Persons taking no active part in the hostilities, including members of armed forces who have laid down their arms . . . shall in all circumstances be treated humanely, without any adverse distinction founded on race, color, religion or faith, sex, birth or wealth, or any other similar criteria.

To this end, the following acts are and shall remain prohibited at any time and in any place whatsoever. . . :

(a) violence to life and person, in particular, murder of all kinds, mutilation, cruel treatment and torture;

(b) taking of hostages;

(c) outrages upon personal dignity, in particular, humiliating and degrading treatment;

(d) the passing of sentences and the carrying out of executions without previous judgment pronounced by a regularly constituted court, affording all the judicial guarantees which are recognized . . . by civilized peoples.

(2) The wounded and sick shall be collected and cared for.

* * * * *

Article 3 of the Geneva Convention of 12 August, 1949, for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field

WHEN the Indochina war ended on 20 July 1954 by a cease-fire, the exchange of all prisoners of war (POW's) held by both parties was, of course, part of the agreement. Thousands of members of the Vietnam People's Army (VPA)—the official name for the Communist forces in Vietnam—who had been made prisoners by French Union troops over the past eight years, were returned. Interned in regular POW camps inspected by representatives of the International Red Cross, their external aspect bore eloquent evidence of the adequate treatment they had received while in French Union hands. They were brought to the transfer points in army trucks or river craft.

French Union prisoners returning from captivity in the VPA area of control arrived on foot, with the exception of the litter cases. The exchange began officially on 18 August 1954 (although, by an act of clemency on the part of the VPA High Command, severely wounded French POW's had been released earlier), and soon two factors became clear: there were not going to be as many returnees as expected, and most of those who returned were walking skeletons whose general aspect was in no way different from that of the survivors of Dachau and Buchenwald. In order not to jeopardize the chances of return of certain civilian and military prisoners who might still have been de-

Communist treatment of Western prisoners of war in Vietnam points up several measures that can be taken to ameliorate, as much as possible, conditions found in a prisoner of war camp in monsoon Asia

tained in Communist camps, the French Union High Command made a deliberate effort to play down the fate and state of those prisoners of war who had returned alive to the French lines. However, a high-level group of French military surgeons and medical specialists was called upon to investigate the exact facts of the situation.

The facts which emerged from the painstaking interrogation of thousands of returnees, in addition to those gathered from civilian sources on the spot and several books published by survivors, give a picture of the Vietnamese Communist attitude toward prisoners of war and military medicine. This needs to be known in the West, since future complications in the area may compel friendly forces to face the same foe once more under similar conditions.

POW Camp System

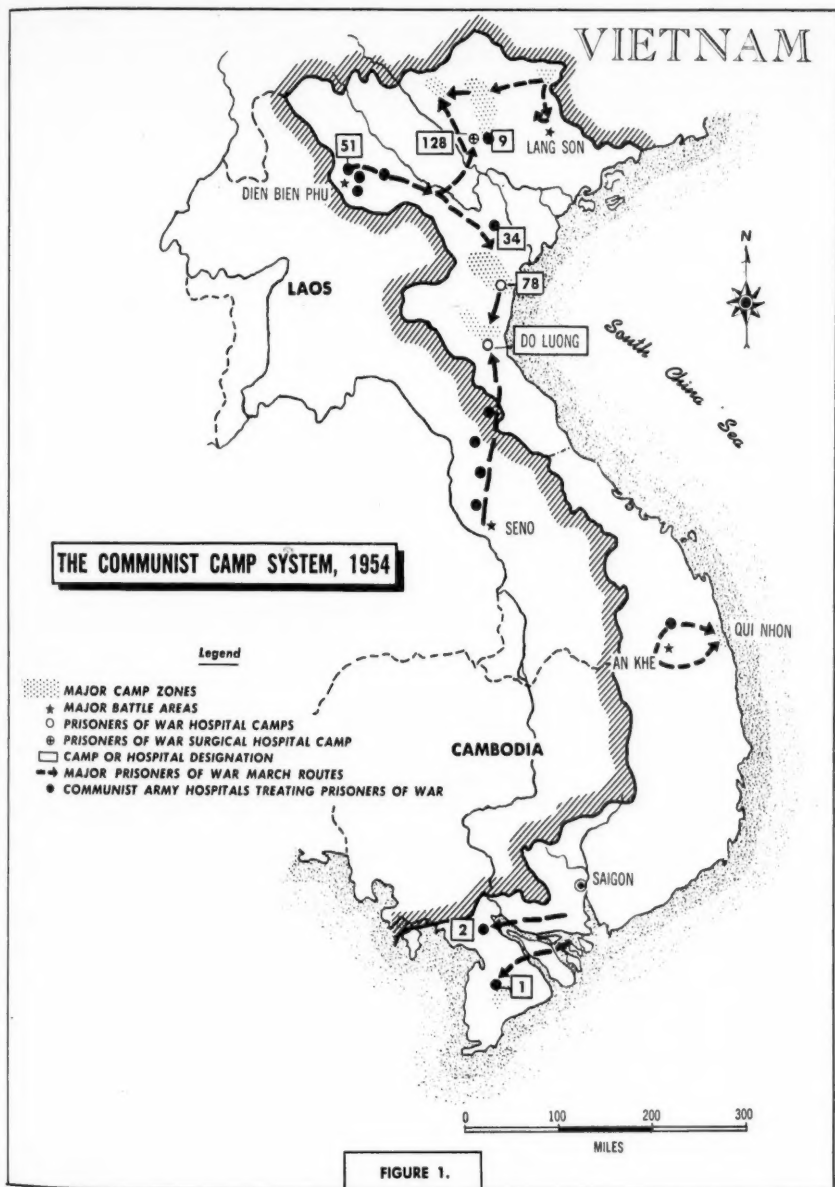
The Indochina war began as an insurrection against the French, with the Communist forces operating on a hit-and-run basis. Even prior to the outbreak of hostilities they had held several hundred French civilians as hostages, including women and children. The hostages, along with whatever military prisoners were in their hands in December 1946, were hurried off into the mountains of northwestern Vietnam. Such a period of fluid operations by irregulars is, of course, most dangerous to the prisoners, for the temp-

tation often arises to get rid of these "useless eaters" who generally slow down the march of a unit and pose special security problems. Likewise, the inhospitable climate (temperatures in the uplands drop to the freezing point in the winter and in the summer the area is heavily malaria-infested) operated its own weeding-out process, particularly on the civilian prisoners. Deliberate killings, however, were not too numerous, as the live hostages were considered a good bargaining point. Quite a few of them acclimated well to existing conditions and survived the whole ordeal in surprisingly good health.

Actual POW camps began to be organized when the ill-fated battles of October 1950 along the Red Chinese border brought the first batch of several thousand prisoners into VPA hands (Figure 1). From 1950 until the end of 1953, all POW's were considered as ordinary prisoners, *regardless of their state of health or their wounds*. All French medical officers captured with the troops were removed from the units and sent to Camp Number 1, the officers' camp (Figure 2), without being able, in the majority of cases, to administer even first aid to the most urgent cases prior to their separation.

The results of this policy were inevitable, and clearly show up in the wound statistics of the returnees: *not a single POW suffering from injuries of the abdomen, chest, or skull survived Communist captivity*. This does not, of course, include simple skin wounds or those who were lucky enough to be evacuated directly from the battlefield of Dien Bien Phu via helicopter during the brief local truce arranged for this purpose between the two high commands in May 1954. In most cases serious casualties either died on the battlefield or within a few days after capture, subject only to medical attention of their own fellow prisoners. In the camps themselves, the VPA maintained an "infirmary" equipped at best with antimalaria tablets and a lancet or

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two, and staffed with a medical attendant of indeterminate training.

In some cases, depending upon the pleasure of the local VPA commander, POW's were transported to VPA mobile field hospitals for treatment. But even in those instances the cure was often worse than the illness, for the POW's, if they survived harrowing portages of hundreds of kilometers on bamboo stretchers, often were left for months without adequate treatment.

There are authenticated cases on record with photos where soldiers were left for eight months with unconsolidated fractures and the resulting osteomyelitis being cleaned out without anesthesia; where a Foreign Legionnaire marched for 25 days with an arm smashed by a machine-gun burst, only to be operated on without antibiotics or anesthesia; and where an Algerian rifleman, his face shattered by a burp-gun burst, marched 33 kilometers and was left without surgery from 1952 until his return to the French in 1954. These are but a few cases and do not include the wounded from Dien Bien Phu.

On-the-Job Surgery

Only in January 1954 did the VPA begin to set up a few hospital camps near the largest concentrations of POW camps (Figure 1), but these were too far apart for the treatment of urgent cases and too ill-equipped for anything but the lightest surgery. Hospital Camp Number 128 was staffed with French medical personnel subordinated to VPA personnel whose state of training in most cases was elementary, but who were anxious to learn the trade by operating on the prisoners. As one of the French medical officers of Camp 128 pointed out: "We may not have saved many lives by performing surgical operations, but we saved quite a few by preventing our overenthusiastic guardians from performing any."

It is clear that under such conditions the survival of a serious surgical case

would have been a near-miracle. Here, again, stark statistics are more eloquent than long phrases—out of a total of 10,754 POW's liberated by the VPA, only 612 were active surgical cases. Of the latter, 391 had been captured at Dien Bien Phu and thus had been in Communist hands for less than four months. Also, 718 others had been surgical cases, but their wounds had spontaneously consolidated and their general low state of health was a primary consideration over their needs for remedial surgery. Out of this total of 1,330 surgical cases, only 81 appeared to have had surgery of any kind during their captivity, and of those, 38 had been operated upon without any anesthesia. Only one POW is known to have survived an appendectomy while in captivity, and that was performed by a French doctor at Camp 128.

The camps themselves were constructed like the villages surrounding them. Their location was never communicated to the French High Command, so that at least in one case a POW camp was completely razed by the French Air Force who believed that it was an enemy installation. In certain cases camp locations were identified by French Union Forces and efforts were made to parachute essential foods, drugs, and clothing to the POW's. Such aid was confiscated as "war booty" by the adversary.

Camp equipment was nil. Only the officers' camp was provided with a pot large enough to boil the drinking water. All other camps simply were located near rivers and rivulets (Figure 2) and the inmates drank directly from the river. The death rate from waterborne intestinal diseases assumed alarming proportions in certain areas. Camp 5-E counted 201 deaths out of a total of 272 inmates between March and September 1952. Camp 70 lost 120 out of a total of 250 men in July-August 1954. Camp 123 lost 350 men (one-half of its effectives) between June and December 1953. Camp 114 maintained

an average of two deaths a day throughout 1952, and even the officers' camp, with its large complement of French medical officers and its comparatively better facilities, showed a mortality rate of 18 percent from 1951 to 1954.

The over-all results of this Communist prisoner of war policy are apparent in this table:

<i>Units</i>	<i>Missing 1945-54</i>	<i>Returned July-October 1954</i>	<i>Percentage of Missing</i>
French Mainland	6,449	2,587	40.1
Foreign Legion	6,328	2,567	40.6
North African	6,695	3,369	50.7
African	1,748	796	45.6
Vietnamese	15,759	1,435	9.1
<i>Totals</i>	36,979	10,754	28.5

In addition, a total of 4,744 persons, military and civilian, were returned by the VPA between 1945 and 1954 to French Union lines during "clemency periods." Of the 10,754 POW's returned after the cease-fire, 6,132 required immediate hospitalization and of these, 61 died within the next three months.

Circumstances concerning the 61 dead deserve closer examination, for they reveal clearly that the situation in the POW camps, far from improving as the VPA received more adequate equipment from the Soviet Union and Red China, actually became worse. For instance, of the 61 that died, 49 had been captured at Dien Bien Phu and all but four had been Communist POW's for less than four months. It must also be emphasized that none of them were surgical cases, but merely "walking skeletons"—men, who after 57 days of continuous combat, had been simply marched to death under the worst possible conditions over 500 miles of jungle paths from Dien Bien Phu to the camps of northern and central Vietnam.

Marches That Killed

It is still not clear what prompted the VPA High Command in singling out the

defenders of Dien Bien Phu for especially harsh treatment. Was it merely an unthinking military "snafu"? Was it a militarily logical attempt to remove the maximum number of prisoners from an area where perhaps they could expect succor through a relief column based in Laos or through a problematical, but possible, airborne raid? Was it a politically inspired

scheme to influence French diplomats negotiating in Geneva for a cease-fire? Or was it merely good psychological warfare designed to break the spirits of remaining French Union troops fighting on in Indochina? Perhaps all of these motivations played their role in the reasoning of the VPA military and political leaders.

In simple terms, the bulk of the prisoners—approximately 7,000, with about 1,000 wounded and 4,000 to 5,000 dead left behind on the battlefield—faced a trek of 450 to 530 miles, according to whether they were assigned to the northern or the central Vietnamese camps. This they covered over difficult terrain during the rainy season in about 40 days, with an average load around 35 pounds, with many of them carrying litter cases or dragging exhausted comrades.

Even more unfortunate were the POW's being escorted north from the battles in Central Laos (Figure 1). Their officers marched from Laos to Camp Number 1, a distance of 900 kilometers, in 63 days with the enlisted men covering the 500 kilometers to the camps around Vinh in a record 24 days.

Death rate figures for those forced marches are not available, but they were

considered high by all concerned. Actual executions of prisoners no longer able to march were not too frequent—they were simply left on the pathside to die. The Communist escort troops were relayed, that is, they did not follow a prisoner group throughout the entire duration of the march. Food given the POW's was cold rice once a day. This diet, to which all but the Vietnamese were unaccustomed, fed to men who were exhausted by their wounds and by two months of constant lack of sleep and adequate nourishment, had serious results upon the health of the column. Dehydration due to continuous dysentery and abnormal perspiration soon made most POW's lose more than one-half their normal weight and probably was responsible for the majority of deaths while on the march.

It is also important to note that the various racial groups or nationalities responded differently to both the physical and psychological strains of the ordeal—a fact which also had come to light in Korea. For obvious reasons the Africans and Asians withstood the march best, in spite of the fact that the Vietnamese who had fought on the French side often were singled out for particularly brutal treatment. Thus among the 10,754 liberated POW's, the various groups accounted for the following percentages of hospitalization:

French Mainland	66.7
Foreign Legion	69.04
North African	60.7
African	24.0
Vietnamese	24.45

The unusually high casualty rate among the Foreign Legionnaires was attributed to the fact that their predominantly central European background, with their fair skins and hair, made them particularly ill-equipped to withstand the murderous monsoon climate. At the same time, their highly individualistic attitude made them adopt in many cases a "may-the-Devil-

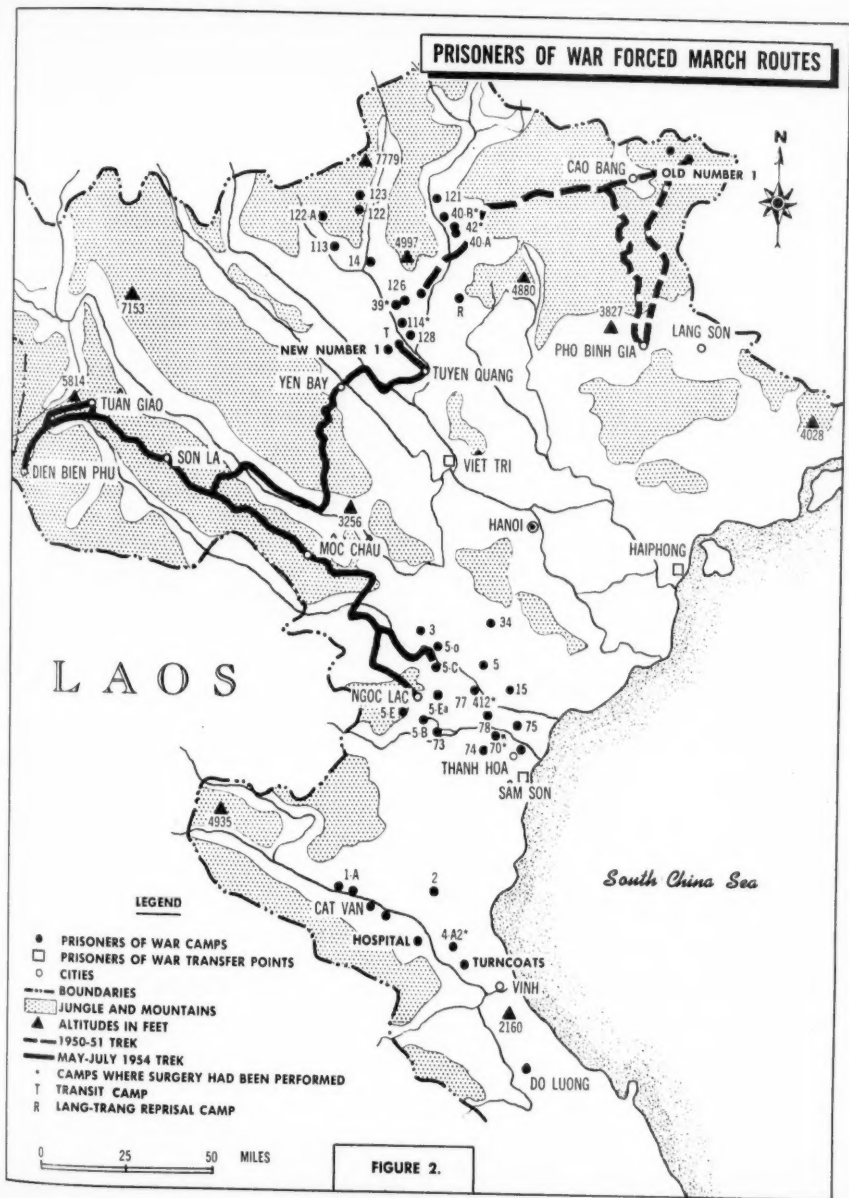
take-the-hindmost" view of their fellow Legionnaires, although, of course, cases of devotion to weaker friends were not infrequent.

The mainland French were hardly better equipped for the trek, but displayed a great amount of group cohesion and devotion to their wounded and sick comrades—a quality which the French already had exemplified in the German concentration camps of World War II. This cohesion was stronger as the POW's involved belonged to one of the elite units (commandos and paratroops) and had succeeded in remaining together as units or parts of units. Wounded and sick were carried along until the camps were reached or until no one was left who was strong enough to carry them. *Marche ou crève*—"March on or croak"—became a byword for the columns as they wound through the steep hills of the Thai country. In the words of some survivors, "only the men with strong character, those who had the will to march, to stay in the column, had a chance of survival."

Here, also, hundreds of well-documented cases attest to what this meant in actual practice: there was the case of Foreign Legionnaire Number 202, of the 13th Half-Brigade, wounded both at Dien Bien Phu and later through French bombing on the road between Tuân Giao and Son La, who was carried for 500 kilometers through the mountains without a stretcher by his comrades and whose fragment-fractured thigh was immobilized only two months later.

There was the paratrooper blinded by shell fragments who was half-dragged and half-carried by his friends for 600 kilometers and the artilleryman with a pierced diaphragm who had to carry 44-pound rice bags.

This was the "Death March" of the French Union garrison of Dien Bien Phu, lasting from May to July 1954. It caused more casualties than any single battle of the entire Indochina war.



Political Cadres

As in Korea, political indoctrination of POW's was standing operating procedure, and, to all appearances, the VPA was better equipped to deal with the various national minorities of the French Union Forces than its North Korean counterpart. Broadcasts or leaflets directed at French troops were written in French, German, Arabic, and even in African dialects. Usually, such materials were prepared by deserters, but also, according to published East German sources, by propaganda organizations in various Soviet bloc nations and by French and Algerian Communists in France.

Every POW camp had its *can-bô* (political cadre) in charge of the "reeducation" of the POW's, and the Communists did their utmost to pit one national group against the other. For example, the Foreign Legionnaires were told that they were being exploited for the "imperialists" and offered repatriation to their east European homelands. A few of them accepted, and recently there arose the curious case of one such Legionnaire who redefected from East Berlin to France to serve out his term of enlistment with the Legion. The Algerians and Moroccans were told a story with a different slant, and still another propaganda line was presented to the Senegalese.

In order to break down unit morale more rapidly, overseas units were separated rapidly from their French junior officers and noncommission officers. In fact, the VPA developed an extremely rigid system of racial discrimination in order to sharpen group antagonisms. This policy had a measure of success, particularly among the Algerians, but several sources (such as Major Grauwinn, the chief medical officer at Dien Bien Phu) mention instances of entire detachments of North African troops who preferred to take in stride the harsh treatment reserved for the recalcitrants rather than to turn "progressive."

In certain cases the political indoctrination began with the wounded themselves. Major Grauwinn states that he found "understanding" with the French-trained chief surgeon of the VPA 308th Infantry Division. However, one of Grauwinn's colleagues, Lieutenant Resillot, had the experience of seeing the wounded under his care reclassified for surgical intervention according to a priority system of "People's Democratic urgency": ex-prisoners of the French, North African enlisted men, Foreign Legion enlisted men, French enlisted men, and, lastly, French officers. The result was that several patients whose state of medical urgency required immediate attention, died before help could be given them.

"Reprisal Camp"

In the POW camps, "recalcitrant" prisoners were subjected to the severest and most humiliating duties. If particularly resistant to Communist indoctrination, they were transferred to Lang-Trang, the feared "Reprisal Camp," which was little else but a death camp. The reeducation process was an important step in the integration of the POW into the prison camp system, for the "reeducated" prisoner had become a "new man." Violation of camp rules by one of these prisoners was considered a relapse into "reactionary" thinking—a grave fault punishable by death. Claude Goëldhieux, a former POW, described such an execution in the following terms:

While the Communists considered an evasion prior to political reeducation as a benign political mistake, their attitude now changed radically. The escapee now became a deserter, a traitor to the cause since his eyes had been opened upon the truth. By attempting to escape, he reneged his new-found faith and reaffirmed his former errors. By an individualistic, hence guilty, feeling, he had sabotaged the political action of the mass of the prisoners. Thus he ceased to exist. The sen-

tencing to death was merely a concretisation of this nonexistence.

Like the United States Army in the case of American POW's in Communist hands, the French Union High Command faced the problem of how to deal with returning "Progressives," that is, soldiers who supposedly, in one way or another, had cooperated with their captors. Here, a sharp distinction was made between those who by their actions had contributed directly to harm their fellow prisoners or the war effort, and those who merely mouthed Communist slogans in order to avoid undue hardships. It was assumed (wrongly, as it turned out in the case of the Algerian POW's) that the level of Communist propaganda was so unsophisticated as not to cause any harm to general combat morale. On the whole this has remained true. Communist psychological warfare in the long run was more effective upon morale in France than upon combat troops in Indochina.

To the knowledge of this writer, no formal official order ever was given by the French Union High Command with regard to the attitude to adopt toward Communist indoctrination. It appears from actual experience, however, that the senior officers detained by the VPA in fact told their subordinates to "go along" with a certain number of Communist propaganda demands as long as such compliance fulfilled the purpose of improving the lot of the greatest number of POW's and did not materially harm the war effort. Thus Major Grauwin signed an "appeal of clemency" to Ho Chi Minh, the President of the North Vietnamese Democratic Republic, in order to ensure evacuation via helicopter of the most seriously wounded POW's of Dien Bien Phu. Similar appeals were signed by other officers and by the French nurse at Dien Bien Phu, Mademoiselle Geneviève de Galard.

The fact that the appeals contributed to the saving of nearly 600 wounded whom otherwise surely would have died on the

trek, seemed well worth the price of a few signatures which, in any case, convinced only those who already were converted. There is no evidence that officers and men whose activities in the propaganda field were limited to such innocuous gestures were in any way penalized by the French Army upon their return.

This, of course, is not the case with regard to deserters—members of the armed forces who deliberately joined the Communist ranks either before or after capture. They are being tried by regular French military courts. Even at the present moment, a steady trickle of such deserters—their total number may have reached about 800—continues to request repatriation to France via the channel of the International Control Commission in Hanoi. It is significant that, as in particular cases of American turncoats in Red China, the returnees seem to prefer the certitude of a jail sentence in France to "freedom" in North Vietnam.

Conclusions

In view of the experiences which Western forces have been able to gain from the POW camp systems in Korea and Vietnam, it may be useful to consider certain steps which will enable friendly forces unfortunate enough to be captured in monsoon Asia to face the prospect of captivity with a better chance of survival.

To be sure, the soldier's first job is to fight with every ounce of strength for his country, and captivity cannot be considered as an "easy way out" from the hardships of combat. It would be equally illogical to rule out any physical and/or mental preparation for possible capture on the grounds that it may incite the soldier to letting himself be captured. Considering the sobering facts that came to light about North Korean POW camps after the end of the Korean war and those revealed about the VPA camps of North Vietnam, capture probably will never become a happy alternative to anyone, no more than

teaching airplane crews to survive in the Arctic or the sea will incite them to crash their planes in Greenland or the Pacific.

A few suggested "POW Survival Measures" may include simple practical steps such as the following:

1. Inculcate ruthless observance of rules of elementary tropical hygiene—making every possible effort to obtain clean drinking water, the use of latrines, and deratization of living quarters.

2. Train a large number of enlisted men with some medical knowledge beyond that of the average present-day corpsman, since they are more likely to be permitted, after capture, to remain with their unit than medical officers.

3. Distribute more complete first-aid kits to all men. Some simple injectable antibiotics could be included, since the Communists almost never gave any to their POW's and then only in ridiculously small quantities.

4. Condition soldiers to local food staples as part of their normal diet. Many French soldiers dug their own graves by refusing to absorb unappetizing "gluey rice" (rice cooked with its husk, which retains all its vitamins) until driven to it by sheer hunger.

5. On the psychological plane the sol-

diers must be trained to carry over the "buddy-system" into the POW camp and, particularly, during the extremely harrowing marches to collection points and assembly centers. *Esprit de corps* probably has saved the lives of more POW's than food or first-aid kits.

6. On the political level, the enemy, whether a nation or a semiregular force, must be made to understand, either directly or via neutral observers or international organizations, that the friendly forces are determined, if need be through the use of retortion or reprisals, to see the rules of war observed to the letter. The agonizing fear which generally gripped Nazi prisoners who fell into the hands of Soviet troops during the latter part of World War II and who expected—and sometimes got—the treatment which they themselves had in many cases meted out to enemy POW's, shows that even dictatorships (or particularly dictatorships) are amenable to this argument.

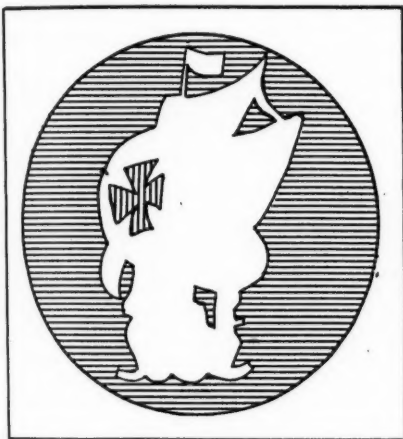
Thousands of unmarked graves dot the march routes of the French Union prisoners of war from the China Gate near Lang Son to the hills of Laos and the sand dunes of Central Vietnam. It can only be hoped that this brief tale of their fate may help save the lives of other soldiers in possible conflicts yet to come.

One of the first things the Army does when a young man or woman puts on its uniform is to instruct that individual in the elements of American citizenship and the American heritage and also in the dangers of communism. In his first weeks of training each soldier undergoes a special 12-hour course of instruction on Americanism versus communism. This course explains communism, its aims, and its threats. The soldier is taught how to recognize Red propaganda and how to use the weapons of democracy, information, and alertness to combat it. In this special course we teach the soldier to take an interest in his government, to use his vote, and to keep abreast of current affairs. This training is designed to provide the soldier with the "why," the necessity for our maintaining military forces and the reason he must serve in them.

General Maxwell D. Taylor

UNITED STATES ARMY CARIBBEAN

Material for this article was furnished by Headquarters United States Army Caribbean.



H EADQUARTERS United States Army Caribbean (USARCARIB), located at Fort Amador, Canal Zone, is the senior headquarters for all Army elements on duty in the Antilles and Panama areas and a part of the Caribbean Command, a unified command composed of elements of the Army, Navy, and Air Force.

The Canal Zone, located in the Republic of Panama, is a strip of land 10 miles wide and approximately 55 miles long—extending from the Pacific entrance on the southeast to the Caribbean exit on the northwest. The Canal Zone divides the Republic of Panama into two almost equal parts. Through treaty rights the United States

Government has complete jurisdiction over the Canal Zone. There are no boundary restrictions between the Canal Zone and the Republic of Panama, and thus the public has free access to either area.

The Canal Zone Government is a US Government agency charged with the administration of civil affairs within the Canal Zone. The Governor of the Canal Zone is an Army general responsible to the Secretary of the Army. He is also President of the Panama Canal Company.

The Panama Canal Company is the US Government agency concerned with the operation and maintenance of the Panama Canal. With but few exceptions, all property and businesses in the Canal Zone are owned and operated by the United States Government. The Atlantic and Pacific sides of the Isthmus of Panama are connected by the Panama Canal, the Panama Railroad, and the Transisthmian Highway.

Mission

The mission of USARCARIB stated briefly is:

1. To train for combat operations.
2. To become proficient in the art of jungle warfare.
3. To provide protection for the Panama Canal and USARCARIB bases.
4. To assist the countries of Latin America in the mutual defense of the Western Hemisphere.

An important phase in the accomplishment of the mission is carried out at the Jungle Warfare Training Center established near Fort Sherman on the Atlantic side of the Isthmus.

United States Army Caribbean stands ready to fulfill its responsibilities in this important area of the world—one of the crossroads of world commerce—and to assist in mutual defense of the Western Hemisphere

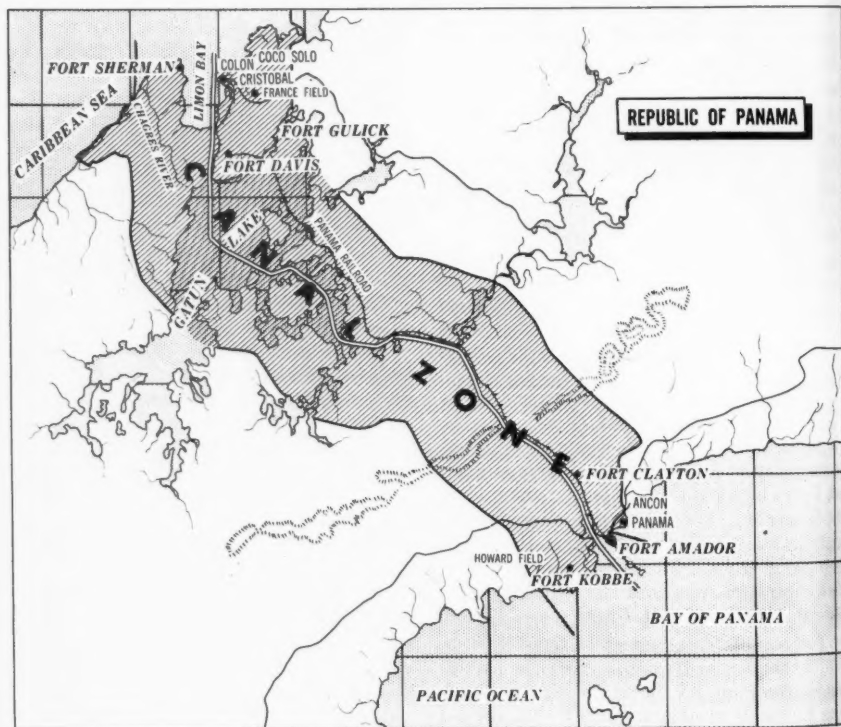
Here, men are taught to fight and survive in the jungle, to become proficient in jungle living, and be familiar with plants and wild life. The course of instruction is progressive from individual training to squad, platoon, and, finally, company exercises.

A vital link in forging the chain of inter-American goodwill and understanding is

partments—the Tactics Department, Armament and Automotive Department, and the Technical Department. Graduates of the school return to their respective nations to pass on the lessons they have learned.

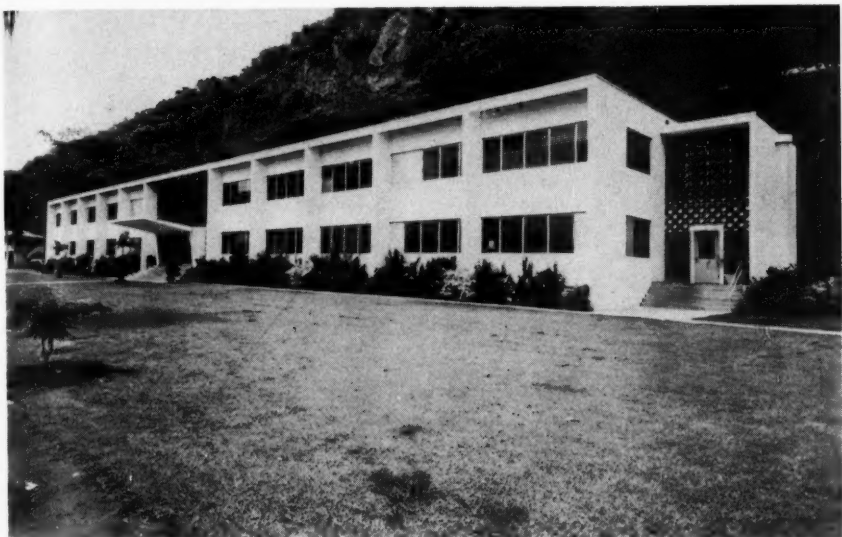
Conclusion

The Panama Canal is one of the great crossroads of world commerce. Its value



the USARCARIB School at Fort Gulick, Canal Zone. Founded in 1949, the school has trained 6,838 students representing every Latin American Republic in the Western Hemisphere. Courses vary in length from two-week special courses to the 46-week cadet course. Instruction is carried out in three major academic de-

to the United States, in both war and peace, is incalculable. Units of the USARCARIB stand ready to fulfill their responsibilities to keep this vital waterway operative. The following official United States Army photographs are an indication of duty in this important area of the world.



Headquarters Caribbean Command situated in Montague Hall, Quarry Heights, Canal Zone

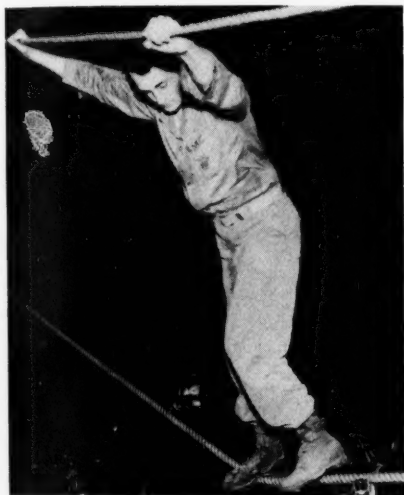


Headquarters United States Army Caribbean, Fort Amador, Canal Zone



Above, one of the early Spanish fortifications at the mouth of the Chagres River, Fort San Lorenzo is the oldest fort under the United States flag. Below, a United States Army Caribbean soldier is learning to fight two enemies—the human opposition and the jungle—at the Jungle Warfare Training Center, Fort Sherman, Canal Zone





Above left, a member of one of the units training at the Jungle Warfare Training Center, Fort Sherman, makes a river crossing via rope bridge. Above right, members of the 1st Battle Group, 20th Infantry, receiving training at Fort Kobbe. Below, these concrete quarters on one of the United States Army Caribbean posts are typical of the tropical construction which is a feature of military structures in this area





Above left, infantrymen and tankers find that teamwork is the keynote. Above right, the center building is headquarters of the US Army Caribbean School at Fort Gulick. Below, diplomatic representatives of 15 American nations and high officials of the US Army Caribbean during June 1957 graduation exercises at the US Army Caribbean School





Above, survey personnel from the Republic of Colombia and the US Army Inter-American Geodetic Survey—a separate subordinate command of US Army Caribbean. Below, field personnel of the national mapping agency, with which the Inter-American Geodetic Survey is collaborating, establish a triangulation station high in the Bolivian Andes





Above, broadcasting and televising activities such as this carnival is one of the enterprises of the Caribbean Forces Network, a US Army Caribbean facility, an affiliate of the Armed Forces Radio and Television Service. Below, *Carib-Ex*, one of the largest exercises ever conducted in US Army Caribbean, was concluded on 28 April 1957



THE INFLUENCE OF MISSILES ON THE BALKANS

Lieutenant Colonel Anastase Balcos, *Greek Army*

ONE cannot overemphasize the strategic importance of the Balkans, under present international conditions. The importance of this area lies far beyond that of including only countries which are part of the defensive structure of the North Atlantic Treaty Organization.

1. It lies also on the attempted connecting link between NATO and Yugoslavia, through the Balkan Pact; and between NATO and the countries to the east and south, through the Baghdad Pact.

2. It controls the important land, sea, and air routes which connect central and eastern Europe to the Middle East and Africa.

3. It controls sea communications between the Black Sea and the Mediterranean.

Perplexing Problems

The NATO countries in this area have difficult problems to solve for their defense, because:

1. The area includes some of USSR and her satellite claims: "The Straits" (Dardanelles and Bosphorus) and Bulgarian access to the Aegean Sea. These will be the immediate enemy objectives in case of a war.

2. A coordinated NATO defense there is not an easy matter to bring about due to lack of depth along the Greco-Bulgarian border which might cause an early seizure of Greek Thrace by an enemy thrust to

the south and differences of political nature resulting from Cyprus.

Since the Balkans are of vital importance to NATO and pose unique difficulties, they present interesting problems for the strategists and military thinkers of the free world. Let us consider an analysis of the military aspects of some of these problems and ideas based on the influences that new weapons of war will have on the strategy in the Balkans.

This article deals primarily with that part of the area literally called "The Balkans," east as far as necessary to include the Straits.

The Balkans are generally a mountainous area. Where flat terrain exists, it is usually in valleys and is the exception rather than the rule. As a result, the few existing roads, as well as mountain passes, acquire a considerable amount of value. No operation can be considered without the possession or capture of both the necessary roads and passes. Since this is the case, the crossroads of major routes, if combined with other features such as sufficient space for concentration and defense of large masses of troops and the defensibility of the same, become of considerable strategic importance.

Strategic Plateaus

Considered for centuries as strategic spots in the Balkans are the "Cosyfo-

As a result of the development of guided missiles, nuclear weapons, and surveillance means it is imperative that a reappraisal be made now of the traditional and important strategic areas in the Balkans

pedion" in Yugoslavia, the "Sofia Plateau" in Bulgaria, and the Straits (Figure 1).

Cosyfopedion Plateau is located in the southern part of Yugoslavia and from this area originate a number of rivers running in all directions. The most important are Axios (Vardar River) to the south, Morava River to the north, and Drinos River to the west. Since all major roads in the Balkans more or less follow the river val-

However, since Cosyfopedion is located on the main routes between central Europe and Greece or the Middle East, it is of real value only in case of operations along this axis. Thus it is of less importance under present international relations than it was in the past.

Sofia Plateau is located on the east side of the Balkan Peninsula and possesses the same general characteristics as Cosyfo-

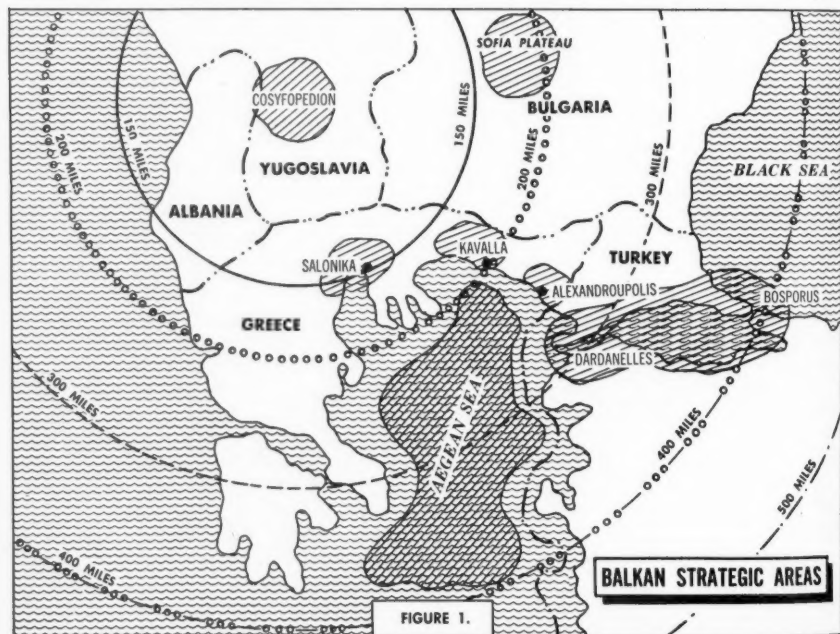


FIGURE 1.

leys, the strategic value of Cosyfopedion becomes clear. An army possessing the plateau can move at will to central Europe, to the Sofia Plateau or to Thessaloniki (Salonika) and from there to the Greek mainland or the Straits.

The value of the plateau is well-portrayed by the fact that during the expansion of the Ottoman Empire, the Turks felt well-established in the Balkans and decided their move to conquer Europe only after the capture of the Cosyfopedion.

Around Sofia Plateau initiate many rivers: the most important being Strymon (Struma) and Nestos (Mesta) Rivers to the south (Greece) and Evros (Maritsa) River to the southeast (eastern Greece and the Straits).

In this area of the Balkans, as in the western portion, the most important communications follow the river banks. Of these routes, the roads and railroads from central and eastern Europe running to the Greek mainland or Constantinople

(Istanbul) make Sofia Plateau vital to any army attacking along that axis in either direction. For centuries the Strymon River Valley was the traditional route along which the Bulgarians attacked Greece, and Évros Valley still is the best approach leading from Bulgaria to the Straits. The strategic importance of Sofia Plateau under today's conditions and international relations cannot be overlooked.

The Straits

The third strategic area, the Straits, is the best known to the west. It was not so, however, in the past when Sofia Plateau was considered almost as important as the Straits. According to legend, it took Constantinus, the Byzantine Emperor, long to decide between the two sites as the location of his capital. In the end he decided in favor of the Straits as a crossroad of multicontinent character as compared to Sofia Plateau. Many years later Napoleon agreed with Constantinus' choice by stating that, "Constantinople is worth half an empire."

The value of the Straits today is incorporated in the fact that their possession controls any land movement from Europe to west Asia and northeast Africa, as well

as any sea movement from the Black Sea to the Mediterranean and vice versa.

Therefore, if the Union of Soviet Socialist Republics desired to move surface and submarine fleets to the Mediterranean to disrupt allied communications, she must first secure the Aegean Sea complex to which the Straits are an initial step. It means, also, that an allied amphibious force cannot move from the Mediterranean to the Black Sea to reach vital areas in southern Russia unless it has access to the same complex and the passage of the Straits.

Cosyfedion, Sofia Plateau, and the Straits are not the only important strategic areas in the Balkans. The additional areas, however, are dependent for their value upon the three already discussed. Some of the additional areas (Figure 1) are:

1. The Thessaloniki plain, an indispensable strategic base for an attack to the north and a certain early enemy objective.
2. The Kavalla-Drama basin, an ideal base for operations toward Sofia Plateau.
3. The Alexandroupolis basin, also a base for operations to Sofia Plateau and, more important, against enemy operations toward the Évros valley.
4. The islands in the Aegean Sea, extending the Straits' barrier almost as far south as Crete.

Modern Arm Capabilities

To analyze the influence of today's special weapons upon the value of particular strategic areas in the Balkans, let us first reiterate certain fundamental characteristics of these modern arms. An atomic weapon can be delivered by as light delivery means as an 8-inch howitzer. Also, the range of our largest tactical guided missiles is approximately 150 miles.

The following table * lists our strategic weapons with announced ranges of more than 150 miles.

* Information obtained from Department of Defense and Department of the Army news releases and testimony before congressional committees.

Lieutenant Colonel Anastase Balcos, Greek Army, is the author of "Guerrilla Warfare," which appeared in the March 1958 issue of the MILITARY REVIEW. A graduate of the Greek Cadets' School in 1938, he also attended the Greek War College; The U. S. Army Infantry School; American Special Weapons School, Germany; and the British Mountain Warfare School and the British Secret Intelligence School in England. He served in the Albanian Campaign during the Greco-Italian War; became a National guerrilla battalion commander during the Axis occupation of Greece; and in 1948-50 was with the National Greek Army during the Communist revolution. He has held many important staff positions including Chief of Plans Section, G3, Hellenic Army General Staff. He was graduated from the 1957-58 Regular Course of the U. S. Army Command and General Staff College.

MISSILE	RANGE (Miles)	AVAILABILITY
<i>Redstone</i>	175	In production
<i>Regulus I</i>	500	In use
<i>Matador</i>	650	In use
<i>Regulus II</i>	1,000+	In use
<i>Polaris</i>	-1,500	High priority in development and production
<i>Jupiter</i>	1,500	In production
<i>Thor</i>	1,500	In production
<i>Snark</i>	5,000	In production
<i>Atlas/Titan</i>	3,000+	Under development

With this information one can logically assume that the enemy's weapons are of similar range and effectiveness. Keeping these capabilities in mind, one might observe that with the tremendous power of atomic and thermonuclear weapons and their startling ranges, Cosyfopedia and Sofia Plateau are vulnerable from possible missile sites located in Cyprus, Libya, Malta, Italy, Saudi Arabia, Sixth Fleet, and, perhaps, as far as England and the United States. The same areas, of course, are subject to attacks with atomic weapons by aircraft based very far away.

It is obvious that these strategic areas are untenable from now on for large concentrations of troops. One may very logically conclude that they must be considered as "passing" rather than concentration areas; areas, however, having the essential characteristics of being easily defendable and giving access to multiple directions. The same conclusions are valid for the Thessaloniki plain, the Kavalla-Drama basin, and the Alexandroupolis basin.

There are two strategic regions, however, to which the above conclusions do not apply. These are the numerous islands in the Aegean Sea and the Straits.

The Aegean islands come in all sizes,

some large and populated, some very small—just a big piece of rock in the sea. All of the larger islands and most of the small ones can very well be used as missile sites. They have the excellent advantage of being almost immune to atomic attack since they are plentiful and dispersed throughout the sea. The enemy, of course, could never afford to use an atomic weapon for each single rock suspected to be a missile site.

Evaluation Changed

The Straits, unlike the others, never were classed as concentration areas and need a different evaluation. After a careful analysis of the Straits, one may wonder if, in this age of intercontinental missiles when the oceans have lost a part of their value as barriers, these areas still possess strategic importance. The Straits today, although of diminished value as a "cross-road" due to the development of aviation and other land and sea routes from Europe to Asia and Africa, still will influence any strategic operations in the Balkans, although for different reasons.

To illustrate, first examine the influence of recent spectacular developments of weapons on the strategic meaning of the Straits in the Balkan picture. The following points must be studied:

1. The capabilities of modern weapons (listed in preceding table).
2. The Straits' sensitivity to atomic attacks within range of *strategic* missile sites and airbases mentioned previously and the fact they are very narrow passes.
3. The influence of the surrounding area on the Straits themselves in light of *tactical* atomic means available today.
4. The possible aggressor tactical courses of action, in an effort to seize the Straits as an objective in the Balkans and for future use in Mediterranean operations.

Since the range of *tactical* atomic weapons is about 150 miles, the Bosphorus Straits are vulnerable to missile bases in south-east Bulgaria, the Alexandroupolis basin,

and on the Asiatic side of the Straits. The Dardanelles Straits are within the range of those bases effective against the Bosphorus and, in addition, to sites in the Kavalla-Drama basin and the Greek islands in the northeast Aegean Sea.

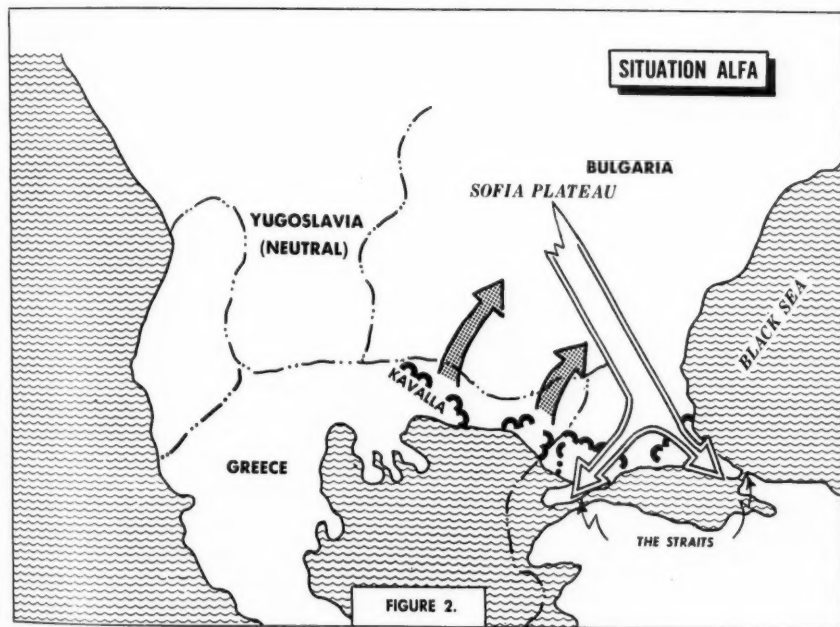
Of these areas of likely missile sites, the most sensitive to possible Soviet retaliation measures are the Alexandroupolis basin and the Kavalla-Drama basin. Perhaps the most immune are the Aegean Sea

Hypothetical Situations

Now let us examine the present strategic meaning of areas other than Cosyfopeion and Sofia by presenting four hypothetical, but very possible, situations that might result from Soviet or allied action to capture and use the Straits.

Situation Alfa

Assume that following the outbreak of war, Soviet tank and mechanized divisions



islands. It would be a mistake, however, to imagine that since the enemy also has atomic weapons, this fact destroys all value of the Alexandroupolis and Kavalla-Drama basins plus the Asiatic side of the Straits as bases or missile sites. The rugged and ideal defensive terrain—especially in the Kavalla-Drama basin—combined with other counteratomic measures, makes these strategic areas still highly useful to friend or enemy.

based in Bulgaria attack along the axis of Evros (Maritsa) River and using the excellent, smoothly rolling terrain of the area, advance quickly toward Bosphorus and Dardanelles (Figure 2). Guided missiles fired from sites well-prepared and camouflaged prior to hostilities turn the Straits into an actual obstacle and prevent reinforcement or even sufficient administrative support of the forces defending eastern Thrace. If the enemy exploits his

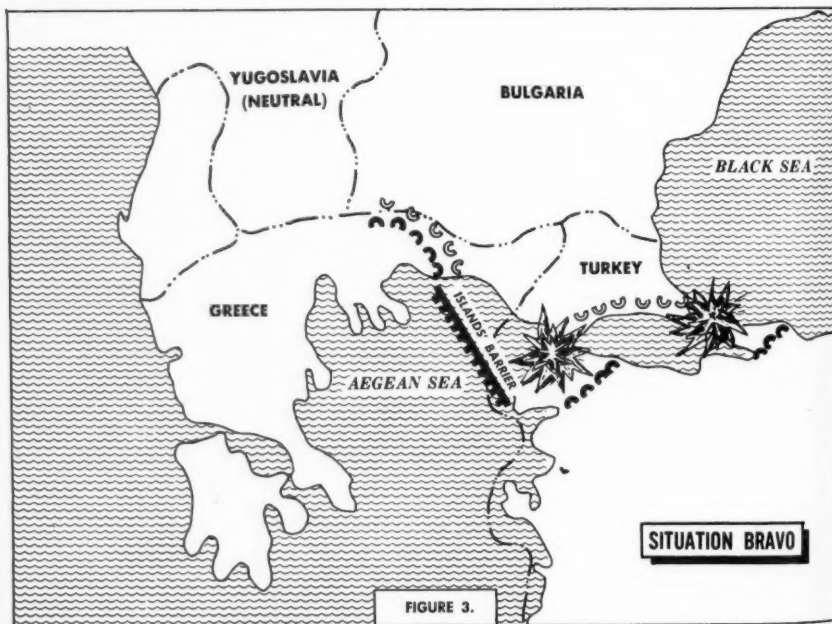
advantages to the maximum, he might advance unhindered and swiftly to seize Constantinople and Calipolis (a city on the Dardanelles).

On the other hand, combined NATO actions in this area or an overt, friendly Yugoslavian attitude would make a difference. If allied forces succeeded in holding the Kavalla-Drama and Alexandroupolis beachheads and took the offensive to the enemy's flanks, the attack to the Straits

the Straits into an obstacle favoring enemy action, and effective defense of the Straits is influenced by the land bases around them.

Situation Bravo

The enemy decides to attack the Straits in two phases (Figure 3). In phase one, attack western Thrace, thereby removing any possibility of a closely coordinated allied defense in the Balkans. As a result,



might be stalled until the allied forces could be pushed to the west. This would give the forces defending the Straits considerable additional time for preparations. Or, the enemy would be forced to allocate a large portion of his forces in a covering role to the west with the result that less forces would be available against the Straits.

Two conclusions can be drawn from Situation Alfa: Atomic weapons can turn

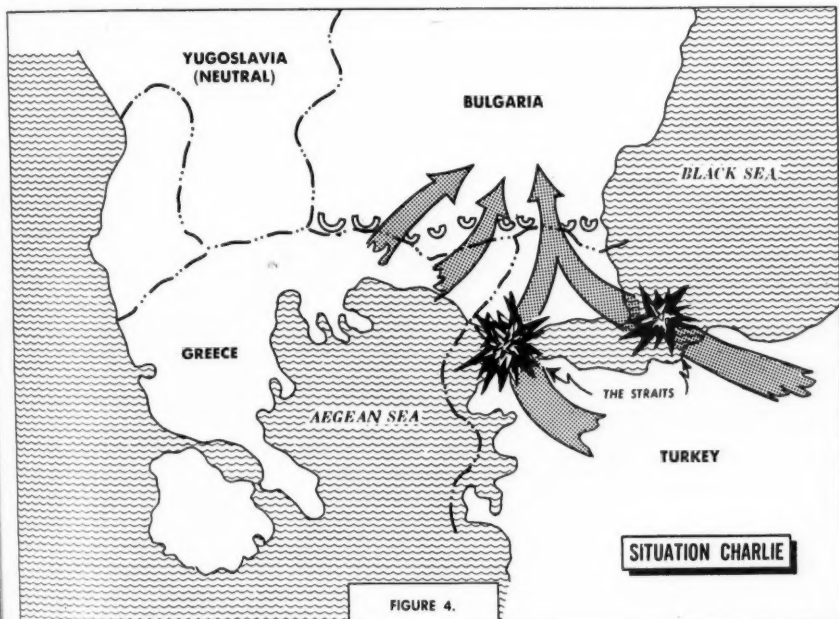
the enemy obtains access to the Aegean Sea coast before dark the first day of his attack. The allied beachhead in Alexandroupolis, after considerable enemy effort, is eliminated, but the Kavalla-Drama beachhead, due to terrain favoring the defender and its support by atomic weapons, is held successfully by the allies.

Following his preparatory operation, the enemy, in phase two, launches his attack to the Straits. The allied forces defending

the Straits, being fully alerted during the enemy's phase one, put up obstinate resistance and the aggressor suffers heavy losses by missile atomic attacks from bases in Kavalla-Drama beachhead, from the Asiatic side of the Straits, and from islands in the Aegean Sea.

In the end, the enemy favored by the flat terrain, adequate atomic support of his attack, and accepting the heavy losses,

the Mediterranean. They also must seize allied-held missile sites located to the south on islands which continue to keep the Dardanelles' exit under atomic fire and prevent land or sea movement in the area. Even if they succeed in seizing these, still more islands exist which, properly used by the defending forces, form an almost atomic-proof barrier. The hundreds of islands spread across the Aegean Sea in



succeeds in overcoming the defender's resistance and seizes the European side of the Straits. But there he is forced to hold the attack because of heavy atomic fires from surrounding allied bases.

The aggressors now realize that even if they accept the very heavy losses involved in an attack to seize the Kavalla beachhead, the islands off the northern Aegean Sea coast, and in an airborne operation on the Asiatic side of the Straits, there still is much more to be done to win access to

considerable depth could preclude movement of enemy forces to the south.

Here again has been depicted the new role of the Straits as an obstacle and their relation to the surrounding land areas and island bases in the Aegean Sea.

Situation Charlie

The enemy launches offensive operations in western Europe, adopting a defensive attitude in the Balkans (Figure 4). The allies now are considering the reversal of

their forces to a drive directed toward the Sofia Plateau. Therefore, they are confronted with a number of problems, one of which is the movement of large forces based in Anatolia across the Straits to eastern Thrace. This poses a difficult dilemma since the Straits are under atomic fire from missile sites in southeast Bulgaria which precludes the concentration of necessary sea transportation.

After the analyses made in Situation

Situation Delta

Assume that Supreme Headquarters Allied Powers Europe is involved in a peacetime study in which a background similar to the one described in Situation *Charlie* prevails. The staff is visualizing the move of a strong amphibious force from the Mediterranean through the Straits into the Black Sea (Figure 5). The purpose of such a move is to counterattack the USSR at its soft point. Following are

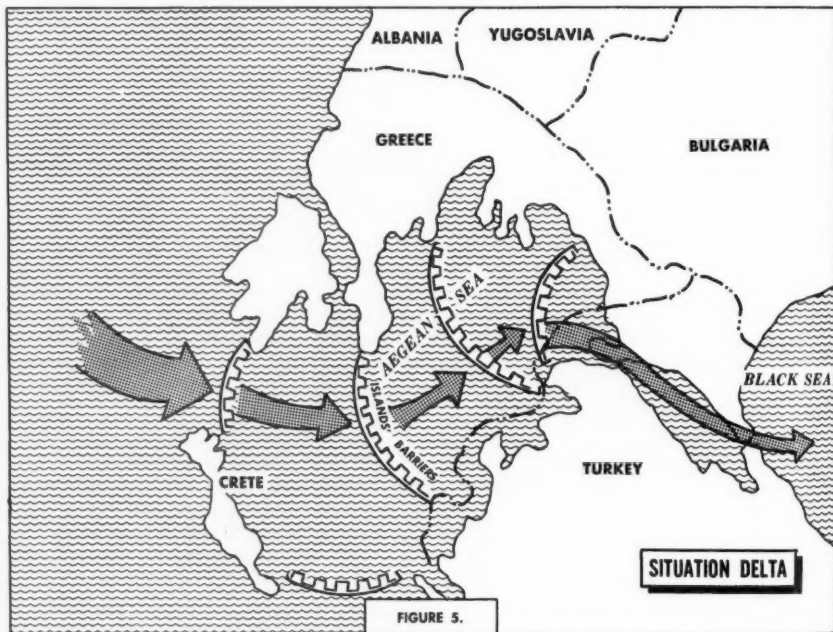


FIGURE 5.

Alfa and *Bravo*, the value and feasibility of a plan providing for an operation in two phases can be seen. In phase one allied forces hold Kavalla and Alexandroupolis bridgeheads and launch a counterattack to the northeast to remove the enemy missile threat. In phase two the forces in Anatolia, being free to cross the Straits, combine their efforts with elements already in the Balkan Peninsula and continue the counterattack to the north.

some thoughts that the staff should consider during its planning:

1. The operation will not be feasible unless the Straits are in allied hands at the time of execution. However, this alone is not sufficient, because if the islands in the Aegean Sea are in hostile hands, the operation still is doomed to failure. To initiate an amphibious attack to seize the hundreds of islands in this area would involve an operation similar to that in the

Pacific during World War II—with the added problem of atomic warfare. The element of surprise would be lost long before completion of the move and risk and losses would be great.

2. If, during preceding operations, allied forces succeed in holding the islands, the situation should be much better. Still, friendly elements could not be transported freely through the Straits unless enemy missile sites in southeastern Bulgaria are eliminated. This can be done by pushing an attack to the north from beachheads held along the northern Aegean coast. Even under these conditions care must be taken not to jeopardize amphibious forces which could be trapped in the Black Sea if an enemy attack succeeded in gaining control of the Straits. Allied forces in this area must be adequate to hold.

Conclusions

As a result of the development of guided missiles, nuclear weapons, and surveillance means, the traditional strategic areas in the Balkans have changed in military meaning. Cosyfopedion and Sofia Plateaus no longer can be considered as areas of strategic concentration in the same light

as in the past, but must be considered as "passing" areas instead. The Straits, instead of being the famous crossroad of intercontinental routes, must be considered as a barrier to these routes—an obstacle to Soviet as well as to allied movements.

The Straits, under their new strategic meaning, should not be considered separate from surrounding land and sea space due to the increased radius and the tremendous power of modern weapons. The Straits and environs must be treated as a unique complex.

Today's value of beachheads in western Thrace lies in the influence these areas would have upon Soviet or allied operations in the Balkans. The beachheads, held as a threat, could discourage an enemy from attacking and possibly capturing the Straits, and thus preventing the allies from using them.

The strategic area of the Aegean Sea islands can be used for a dual purpose: first, as an atomic-proof barrier to deny a Soviet exit from the Straits, and second, as a link in a defense on the right NATO flank in case such a defense is interrupted by the fall of Greek Thrace.

The compact lines of defense and massive concentrations for offense which characterized our operations in World War II and Korea are as obsolete on the atomic age battlefield as was the Maginot Line on the frontier of France in 1939. It is imperative that we realize this fact in all of its many implications. A new doctrine must be evolved from concepts based on our realization.

General Willard G. Wyman, Retired

THE LEADERSHIP OF CORTES

Captain M. J. Layton, *United States Army Reserve*

IN 1519, just 27 years after Columbus first sighted the West Indies, a young Spaniard landed near what is now Veracruz, Mexico, with an "army" of some 400 men. Two years later, after some of the most desperate campaigns in military history, Hernando Cortes had conquered this populous, highly civilized, and warlike empire.

In our era, where wide dispersal of forces points to the necessity of independent action by small unit commanders, a study of the leadership demonstrated by this remarkable man should be profitable.

Often frustrated by men who regarded themselves as above taking orders, hampered by a vacillating government at home, outnumbered in battle at ratios of thousands to one, Cortes survived only by developing a talent for leading men equalled by few commanders in military history.

He found it necessary to concern himself with the minute problems of morale and small unit tactics as well as the ordering of armies in the strategic reduction of a vast empire.

At times little more than an outlaw as the political vapors shifted in Spain, Cortes faced problems that seldom concern the commander in the field. Several times he was in danger of being deposed, or even murdered, by his own men.

Hernando Cortes possessed the traits and practiced the principles that we consider necessary in any commander. Despite his lack of formal military training he was proficient tactically and technically; the art of war seemed to come to

him instinctively. What he needed to learn he picked up quickly in battle.

Among the men who landed with him on the bleak Mexican Coast few could be considered soldiers. Some had fought in Italy and elsewhere in turbulent Europe. Most, however, were young men out for adventure and gold; overly proud, reckless, undisciplined, prone more to fighting among themselves than acting in concert; altogether an explosive handful for any commander.

Out of this crew Cortes fashioned an army that could march incredible distances, put down an insurrection, and then march again, to fight immediately.

It was an army that would defeat an Indian nation and make that nation its staunch ally. It would capture an emperor and make him its tool. It would defeat a larger army of its own countrymen, out to depose Cortes, and then take that army into its own ranks. It was an army that would fight its way out of Mexico City, the capital of the Aztec Empire, with terrible losses, and then, in its retreat, defeat, without firearms, an army raised from the federated tribes of all Mexico. It would lick its wounds, rebuild, and march back into the city and level it.

It was one of the most successful armies in history, and its leader one of the most successful commanders.

Cortes' Real Advantage

Too often the conquest of Mexico has been written off as the simple subjugation of a number of tribes of ignorant Indians

Although our weapons system has been modernized and tactics altered, the art of leading men is changeless. Cortes survived only by developing a talent for leading men equalled by few commanders in military history

by men far ahead of them in civilization. It is true that the Spaniards had firearms while the Aztecs had to rely on bows and arrows, lances and slings. And it is true that the Spaniards had metal armor, and that they had horses which frightened the Aztecs as much as the "sticks that made lightning."

But Cortes had only the imperfect muskets of his day, not very accurate and of little range. And he did not have great supplies of gunpowder. His army of 400 was supplied with but 16 horses. It was not long before the superstitious Indians learned that the horse was not some divine creature, but a beast that could be killed. The Spaniard's metal armor certainly was useful against Indian arrows, but many of them found that the Indian armor, made of quilted cotton, was more effective.

The advantages held by Cortes were only partially in his superior armament. The best resources he possessed were his iron will and intuitive grasp of leadership.

Decisiveness is an essential to leadership. Few commanders of history have shown the decisiveness of Cortes when he ordered his fleet sunk at Veracruz while his men were debating whether to follow him. With their ships gone there was nothing else they could do. He had made his decision and expressed it in a clear and forceful manner.

From the coast the army moved inland, without maps, without knowing the true strength of their enemies—although they became more impressed with it the farther

they went—until they came to Tlaxcala, traditional foe of the Aztec and the only nation in Mexico strong enough to maintain its independence.

Defeat of Tlaxcalans

The diplomatic Cortes made these people his friends and staunch allies, but not before he had fought them several times and been nearly defeated. At no time did Cortes reveal his leadership qualities more



Hernando Cortes

than in these battles so decisive to his conquest. In the face of the Tlaxcalan Army, which various chroniclers have estimated from 30,000 to 150,000 men, Cortes was always where he could control the fight. No man among those proud cavaliers fought more desperately. But few fought as sagely, and time after time the commander brought victory from near defeat by a cool appraisal of his situation and a quick seizure of the initiative.

Captain M. J. Layton served in the Aleutian Islands and Europe during World War II. He was graduated from the University of Denver in 1950. Recalled to active duty the following year, he went to Korea where he was with the 11th Airborne Division, 10th Special Forces Group, United Nations Partisan Infantry. He was again released from active duty in 1954, and is presently commanding an infantry reserve company in Washington State.

Although the Spaniards defeated the Tlaxcalans, many of them were fearful that the Aztecs, far more numerous and powerful, could never be subdued. They, therefore, told Cortes that they wanted to return to Cuba, that any attempt to go farther would only lead to the death of them all.

It was here, as on similar occasions later, that Cortes displayed another facet of his ability. He admitted their grievances, but pointed out to them how glorious their victory had been. He told them of the gold they would take from Montezuma, the Aztec Emperor, and to clinch his argument he reminded them that to retreat to the coast now would invite every Indian in Mexico to fall on them from the rear.

So they went on toward Mexico. Cortes took his army next to Cholula, the holy city of the Aztecs. He offered peace, and was received politely, but once within the city he learned that he and his men were marked for massacre.

Again Cortes took decisive action where tact and diplomacy had failed. Calling the nobles of the city into a courtyard he closed the gates and his musketeers, cross-bowmen, and swordsmen slaughtered them. To the modern soldier, grown up under the rules of international law, however imperfectly followed, Cortes' decisiveness might seem overly bloodthirsty. But he was convinced that he and his men were to be attacked and he did the only thing he could; he struck first.

His way no longer challenged, Cortes marched his army to the city of Mexico, met Montezuma, and moved in. He and his officers slowly took over and finally seized Montezuma, ruling his vast empire through him. Cortes now set out to plunder the treasury of the richest country—in gold and silver—in the world at that time. Hardly an example of leadership, this, but even here, insofar as his army was concerned, Cortes held true to the traits that had brought him this far.

Cortes Threatened

While this conquest was taking place enemies of Cortes, jealous of his success, were sniping at him from home. Eventually, an expedition far outnumbering his was sent out, its commander, Pánfilo Narváez, instructed to take over Cortes' army and to punish him.

When Cortes learned of this he was in a quandary. His hold on Mexico now rested solely in his captivity of Montezuma. It would be almost impossible to take the emperor with him without stirring up his subjects, who, although hostile, had not yet attacked the Spaniards out of fear for their sovereign's safety. To release Montezuma would only give the Indians leadership and would surely result in an attack on the Spaniards.

Cortes chose to leave the emperor in Mexico City with some of his men while he went to deal with Narváez.

Although his course in the light of alternatives was the best, Cortes made one of his few mistakes in his choice of the commander of the garrison to stay behind. He named one of his captains, Pedro de Alvarado, a hot-blooded hidalgo who had proved himself a combat leader during a dozen hard fights. What Cortes did not take into account was that while Alvarado, as a fighter, was equal to himself, his judgment was sadly deficient. Alvarado nearly lost Mexico for Cortes.

With 265 men Cortes set out to meet Narváez who had nearly a thousand. Nearing the camp of his rival on a stormy night, Cortes called together his soldiers and reminded them of their triumphs and sufferings. He told them that the Narváez expedition meant their contributions to their country were to be ignored and they still had to justify their course. He let them know, too, that if they failed to defeat Narváez, they might very well hang.

It should be pointed out that Cortes was not in rebellion, as might appear. Although he had no royal commission to ex-

plore and conquer Mexico, neither did Narváez, who was acting only on the orders of the Governor of Cuba, Don Diego Velázquez, an enemy of Cortes whose authority existed only on his own island.

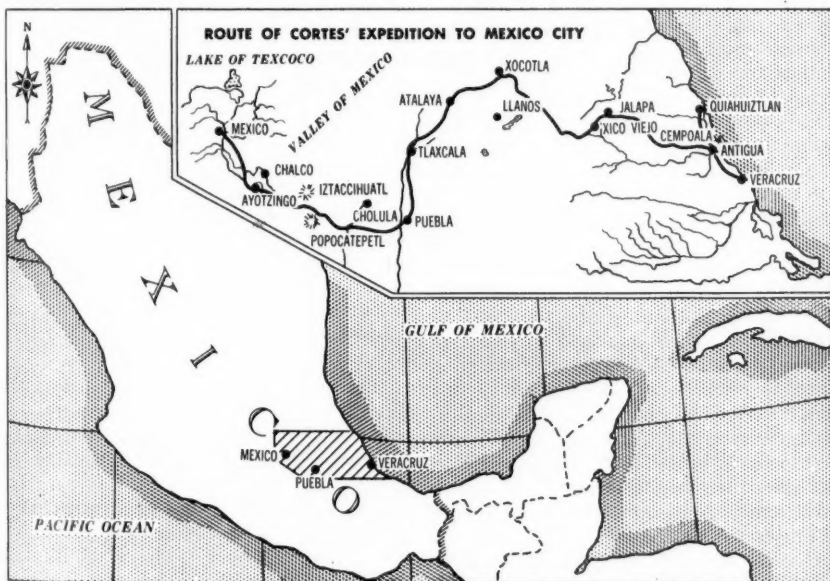
Narváez Defeated

Following this harangue, Cortes told his buoyed-up troops that he proposed to attack Narváez that night in the storm. Here, again, he demonstrated traits that proclaim leadership. He knew that to de-

with lances, or pikes, specially built to halt charges of horses, for use against Narváez' cavalry. In this he did what the Indians had been unable to do, demonstrating once again an astute reasoning.

His men divided into teams, each with its specific mission, his newly devised lances ready, his men spurred by tales of glory and fears of retribution, Cortes and his band fell on the sleeping camp of Narváez.

The battle lasted only a few minutes.



feat Narváez he would need surprise. He knew that the Spanish soldier, valiant in battle though he was, frequently took duties such as standing guard rather lightly. Surprise would be most assured during a stormy night.

Cortes now told his soldiers that everything depended on obedience. He cautioned the cavaliers, so often bent on achieving personal glory, not to break ranks "from desire of distinguishing yourself."

Cortes had prepared himself in advance

Narváez was captured, a few of his men were killed, and Cortes began receiving the allegiance of the defeated army. It must be said for the soldiers of Narváez that they were never as opposed to Cortes as their commander was, and once they were given an opportunity to join the conqueror they did so.

Cortes now displayed another leadership trait—justice. His victorious men had seized the best of the equipment and the horses of the Narváez men. Cortes, to

help win these men, ordered the horses and most of the other booty returned. This did not set well with the old companions who had marched with him so long and hoped for relief from the tire-some walking by which they had traversed the country twice.

His hold on them, however, was such that they accepted his decision, although with a great deal of grumbling.

Critical Problem

With the size of his army tripled and outside threats against him dampened, Cortes turned back to Mexico. But now his failure in reading his man worked against him. Alvarado, contemptuous of the Aztecs, and remembering the success with which Cortes had anticipated the ambush in Cholula, tried to do the same in Mexico. He invited the principal nobles of the city together and massacred them. The result was quite different from Cortes' decisive move; the population of the largest city in the Western Hemisphere arose against him and his 140 men.

Cortes had only managed to extricate himself from one seemingly overwhelming obstacle when he was confronted by this new problem. He hurried back to the capital, stopping off in Tlaxcala on the way to reassure himself of the constancy of his allies there, and to bring some of them with him.

Cortes listened coldly to Alvarado's excuses but took no punishment. He could afford neither to lose a battle-trying commander nor to offend the numerous friends of the popular Alvarado. This may seem a weakness, but it was inevitable and had to be accepted in good grace; actually, it strengthened his hold on the army.

On Cortes' insistence the captive Montezuma addressed his people and was wounded when they demonstrated against the Spaniards. The emperor, ashamed at his weakness in dealing with the Spaniards, refused treatment and died.

There was nothing now to check the

Mexicans and they launched an all-out attack on the Spaniards trapped inside the city. Cortes was confronted not only by hundreds of thousands of Indians who openly taunted his soldiers that they would soon be sacrificed to the Aztec sun gods, but also by his own men, especially those recruited from Narváez' band, who were indignant at the collapse of their dreams. They had been promised riches if they came to Mexico with Cortes. They found themselves surrounded and facing massacre.

Withdrawal

Without waiting to mourn his predicament, Cortes ordered a withdrawal from the city.

Mexico was built on a lake and connected to the surrounding plain by broad causeways, interrupted at intervals by bridges. It was along one of these causeways that the army now fought its way free. It was attacked all the way by thousands of Indians in canoes. These, together with the masses that followed down the causeway, captured many of the Spaniards for sacrifice in the temples.

The *Noche Triste*, or "Melancholy Night," on the causeway represents, at the same time, the high and low of Spanish arms. The army, some 1,200 strong at the time of reentry into the city, was reduced to about half that size. In addition, it lost most of its horses and all of its artillery and firearms, down to the last musket.

The Spaniards were beaten but the Aztecs did not press the attack the next morning. The breathing space gave Cortes time to plan and he set his course for Tlaxcala, having been deserted by all his other Indian allies. However, his way out of the Plain of Mexico was blocked by the largest army the Aztecs had yet assembled, called together by Montezuma's successor. All the tribes of the plain, convinced now that the Spaniards were not gods, flocked to the Aztec banner. The Spanish chroni-

clers tell us that the hills were covered with Indians for as far as the eye could see.

Cortes took his usual prompt action. Showing no signs of fear, he coolly instructed his men in the use of their pikes and lances. He stationed his few Tlaxcalan allies and his dozen horsemen on the flanks and moved forward.

The army took the jolt of the clash without wavering and as the Indians swept around them they presented an unbroken front, held their ground, and even moved forward, hacking with swords through walls of flesh.

But sheer numbers were too much; soon every Spaniard had been wounded, some were dead and their strength was fading when Cortes spotted the brilliant plumage and bodyguard of the commander of the Indians. Calling his men to support him he rode at the chief.

One of the Spaniards killed the Indian and secured his banner. The bodyguard fled and the flight became general. In a short time the field was left to the exhausted Spaniards and the thousands of dead Indians.

This battle of Otumba is well-authenticated, although historians differ as to the number of men involved. Some say the Indians numbered 200,000 and their dead totaled 20,000.

Cortes' leadership, the discipline he had instilled in his men, his own inspiring example, and, above all, his ability to think under pressure, had preserved the army and secured a victory.

Need for Allies

The Tlaxcalans welcomed the army and this too can be credited to Cortes. His skillful diplomacy in smoothing the way with them, his frankness and fair treatment, and his ready recognition of their ability and worth had secured their staunch loyalty.

Cortes wasted no time bemoaning his misfortunes. Realizing that to conquer the country he must have Indian allies—

more than just the tough but not so numerous Tlaxcalans—he set about punishing the villages that had turned against him during the retreat. Those cities which surrendered after a half-hearted fight he spared, but several, which had massacred small Spanish garrisons, were razed and their inhabitants sent into slavery. The friendship of the Spaniards was to be made a prized thing. At the same time, those who did accept his leadership were promised protection from the cruel Aztecs, the most hated of all the nations in Mexico. Cortes kept these promises, sometimes at cost to himself and his army, but he had learned the value of allies, and only by keeping his word, both as to reward and punishment, could he retain them.

With the arrival of a few reinforcements and some arms from Cuba, Cortes began his return to Mexico City. He built up his alliances with the other Indian nations through a policy of firmness and justice, making examples of those who opposed him and protecting those who sought his aid.

In spite of the memory of his humiliation and his still weakened position, Cortes now did what he had never before attempted to do—he published a code of conduct for his men, or articles of war.

One of the sections of this code reminded his officers that they were part of an army, and warned them against over-impetuous actions in the heat of combat. So strongly did Cortes view this propensity for individual action that the regulation against it carried provision for the death penalty.

The code also forbade looting, a pastime considered practically a natural right by the Spaniards. Nevertheless, if he were to achieve solidarity among his Indian allies looting must stop. Cortes was becoming stronger.

Although his new recruits from Cuba brought him arms and ammunition, the resourceful Cortes sent men to a nearby

volcano to secure sulphur to build up their supplies of gunpowder. He drilled his Tlaxcalan allies into a more scientific force and schooled them in discipline.

New Expedition

Before leaving Tlaxcala, Cortes appointed one of his men a shipbuilder and told him to construct 13 brigantines there, give them a trial float on a lake, and then dismantle them and bring them across the mountains to the lake on which Mexico was situated, there to be reassembled.

Only a man of vast energy and vision could have devised such a plan.

During this period Cortes was again beset by dissension in his own ranks. Many of the soldiers of Narváez, whose service under Cortes had been marked only by heavy fighting, demanded to go home. Even some of his own veterans expressed doubts of ever subduing the country.

The disaffected ones were, he believed, not sufficient in numbers to cause his force to be weakened if he let them go. So he did everything he could to help them on their way, providing them with guides and ships at Veracruz and giving them a share of the booty they had managed to bring out of Mexico along the terrible causeway.

These men were no friends of Cortes and hurt him in his troubles at home. But from the standpoint of leadership it was a good move. Malcontents in an army only spread their rot and at the same time make poor soldiers. Their leaving strengthened the resolve of the remaining men and it relieved Cortes of doubts as to the reliability of his men. He believed that those who stayed could be trusted.

While preparing for the siege of the city, Cortes received calls for help from Indian cities which had overthrown their Aztec rulers and accepted Spanish authority. His officers were against detaching any of the men from the main body to fight for these Indian allies, but Cortes, realizing that he could never reduce the city

without allies, answered by sending one of his top officers, Sandoval, to their aid. He was right again. The Indians were impressed, the allies reassured, and the enemy subdued.

The Siege

The army now put Mexico to the siege. The brigantines, transported over the mountains on the backs of Indians, swept the lake of canoes and blockaded the city. Cortes advanced three columns along the causeways. The Aztecs were offered amnesty but refused. Only the complete reduction of the city would suffice. Cortes' force now numbered something more than a thousand Spaniards and from 110,000 to 150,000 Indians.

For three months the Aztecs defied the Spaniards. It was disheartening work and, seemingly, of no avail. The Spaniards fought into the city by day but were forced to withdraw at night. The next day the same ground had to be retaken. The Aztecs fought from the roofs of houses and from the alleys.

Cortes decided to tear the city down. When a penetration was made into a sector it was razed. The bricks were tumbled into canals and the ground made as flat as thousands of Indian workers could make it. What had been a vast, beautiful city became a flat maneuver ground.

In the meantime, however, Cortes had to deal with trouble again in his own ranks. A plot was uncovered to murder him and his chief officers. The plotters would take over, the army would give up the senseless siege, which seemed to be getting nowhere, and return to Cuba.

Cortes acted with his usual decisiveness. He seized the man believed to be the chief plotter, Antonio Villafana, one of Narváez' men, and after a short trial hanged him out his barracks window for all the army to see.

Before Villafana died Cortes had taken from him a list of the others in the mutiny. They were not numerous but they did

constitute a percentage of the army's effectives and they did have some influence, both in the army and at home. To allow them to live, knowing that he was aware of their treachery, would have been impossible. Killing them would weaken his army and offend some powerful persons. Cortes, therefore, told the army that he did not know who the other plotters were but that he would welcome any complaints. The plotters, standing under Villafana's swaying feet, held their tongues. Cortes hinted that he would be able to detect the others by their actions in the future. These men then became some of the stoutest fighters in the army, eager to convince Cortes, by their deeds, that they had nothing to do with the attempt on his life.

This incident, more than any other, demonstrates the keen insight Cortes possessed into human nature. He rid himself of a sore spot in his army and made men who had been willing to kill him only hours before now strive desperately to show him their loyalty.

Despite Cortes' caution against taking individual action the spirits of his officers occasionally got out of hand. The Aztecs set an ambush just as the army made one of its strongest attacks into the city. Three columns moved simultaneously. One, under Julian de Alderete, a newcomer but a man of high rank, moved faster than it should have and was cut off. Only Cortes' cool appraisal of the column's plight and his decisive action in opening up a way for its retreat prevented loss of a third of his army. Even so, the Spaniards suffered greatly.

Alderete, like Cortes' friend Alvarado, was too high in the Spanish hierarchy for punishment. Like Alvarado he was a skillful soldier and leader in battle. Cortes could only give mild reprimands and remember not to let these officers take positions again where maturity of thought counted as greatly as skill in combat.

This setback had its effect on the constancy of the Indian allies. Most of them again deserted the Spaniards, and even the Tlaxcalans began marching home. These people, who had fallen for a prophecy of the Aztec priests that the Spaniards would be destroyed by the gods in eight days, returned after the end of that time, rather sheepishly, but ready to serve again if Cortes would have them. He would. He greeted them with reserve and turned back to the siege.

Conclusion

The starving Aztecs still refused to surrender and the army continued its slaughter of the warriors. Eventually, however, the science and discipline of the European army and the determination of Cortes prevailed and the Aztec emperor was forced to flee in a canoe. He was captured by one of the brigantines and the Aztec defense dissolved. The siege was over and Cortes was Conqueror of Mexico.

Weapons are developed and tactics are altered, but the art of leading men is changeless. Cortes possessed to a degree seldom attained the ability to influence and direct men in such a way as to obtain their obedience, confidence, respect, and loyal cooperation. He accomplished his mission.

MOVING?

If you are moving, please notify the MILITARY REVIEW, Fort Leavenworth, Kansas, of your change of address. Be sure to include your name, *old* address, and *new* address.

Formalizing the Informal

Major James G. Piper, *Infantry*
G4 Section, United States Army Europe

IN EVERY military staff of history, in whichever country it served, or whatever type of forces it directed, there has always been an informal organization superimposed over that depicted in the organizational charts. The reason is obvious: No fixed organization can be flexible enough to meet all the demands placed upon it because the demands themselves are not fixed. Any attempt to create a fixed staff to meet changing demands is faced with a contradiction in terms.

In the field army a second complication—that of space—exists. As long as all elements of a staff were together, informal coordinations could be made more or less freely and decisions arrived at through formal channels based on a thorough interchange of ideas and information through informal channels. But this will be very difficult to do in the field army. No commander in his right mind would put all his staff in the same building—or in the same town for that matter—under conditions of atomic warfare. Dispersion is just as much a necessity for the staff as it is for the troops.

It is true that modern communication and electronic gadgets can bring ideas and facts together when the people furnishing such data are miles apart. However, men have not yet reached the stage of mental development where such machines are a suitable substitute for personal contact. The informal channels enjoyed in a

single building are, therefore, torn asunder when the Army takes to the field. This is the problem that Army staff organization must solve.

Logical Combinations

There are a multitude of functions performed by a staff at field army level. Some of these functions naturally go together. Others operate very closely at times. Still others have little in common. The problem is to bring all of these functions together in such a way that they contribute logically and easily to the field army's mission.

In order to appreciate the field army staff organization depicted (Figures 1-4), it is necessary to clear the mind of all preconceived notions of staff makeup and retain only two concepts. One is the hodgepodge of functions that still must be performed and the other is the operational environment in which these functions must operate.

The field army occupies a large area and various activities are taking place in practically every corner. Up near the front a tactical command post is directing the efforts of the combat elements; somewhere near the area's middle someone is worried about rear area security; at still another location can be found the main army headquarters with its myriad duties; in some large city to the rear military government is being established; and so on throughout the army zone. Such dispersion is required

No fixed organization can be flexible enough to meet all demands. It is time to formalize the informal channels that work well together and organize a staff built around the tasks that have to be accomplished

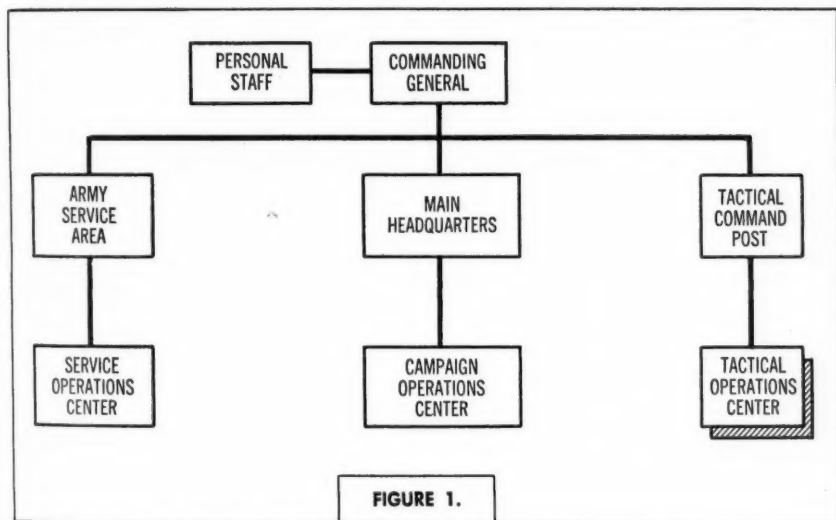
not only from the standpoint of safety, but also from the requirements of the various functions that are being performed. It is this type of physical separation that must be combined with the various functions in order to produce an operating staff.

Each of the shaded blocks in Figures 1, 2, and 3 represent staff elements that are capable of performing in a physical location of their own. There are seven such organizations. They do not have to be

or special staff assignments, can be found at the Planning Center, and so on for each location.

Centers for Control

This does not mean that no interlocation liaison is necessary, of course. Various War Rooms have been provided (Figures 3 and 4) to permit all elements to keep up with the current situation. From time to time, depending on the situation, it might even prove advantageous to move an entire element from one location to

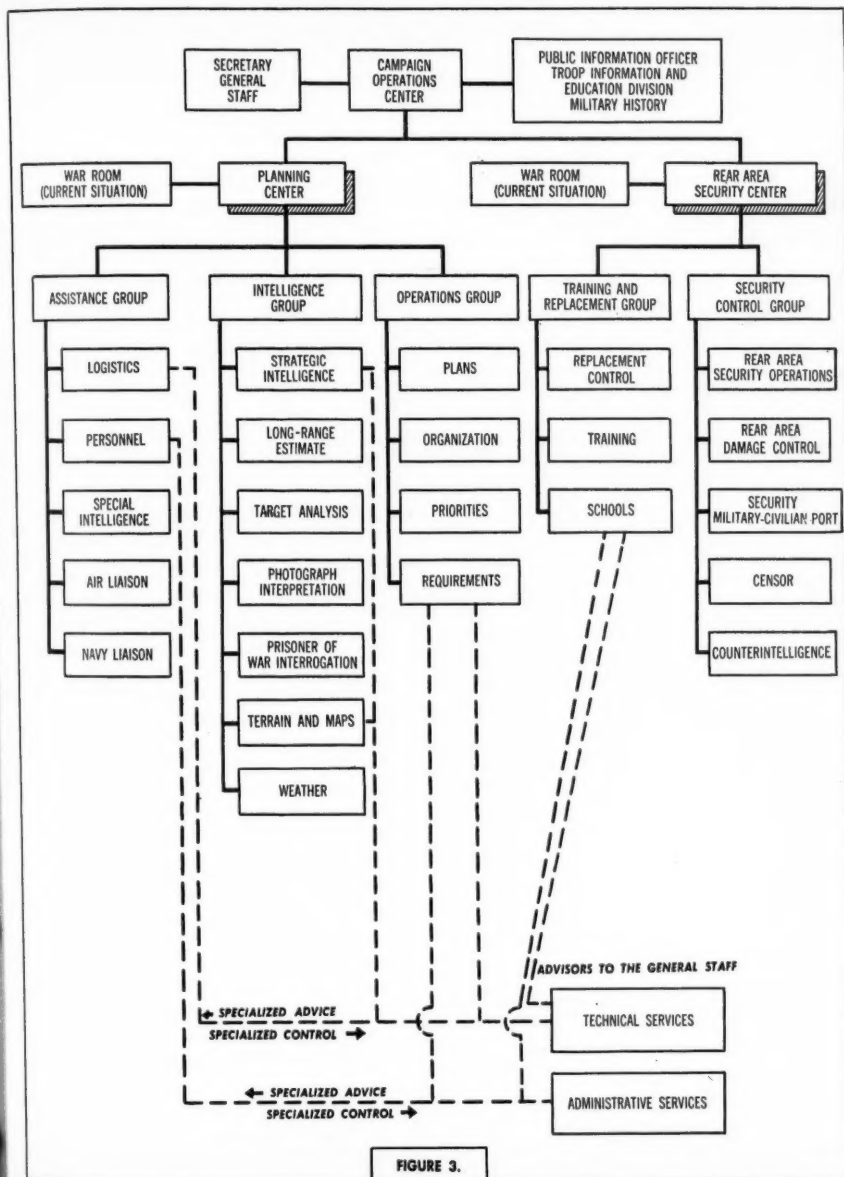


separated, but they can be, if necessary, and still perform their missions. It is difficult to say which of these locations is the most important—it depends on the mission at the time.

The important thing is that at each physical location are grouped those elements directly contributing to the accomplishment of a particular function. All of those elements of the staff that are concerned with present combat operations are in the Tactical Operations Center. All that contribute to planning future operations, regardless of their present general

another. The charts illustrated merely show the norm.

The current combat mission of the army is directed from the Tactical Operations Center (TOC). The heart (or more precisely, the mind) of this center, and of the entire army as long as it is conducting a tactical operation, is the Control Group. The other groups with their subsidiary elements merely contribute. The TOC is commanded by the deputy commanding general although it is probable that the commanding general himself would spend much time there.



The third ranking officer of the army commands the Campaign Operations Center (COC) which, in turn, is subdivided into Planning and Rear Area Security Centers. Where the COC itself is located will depend on where the emphasis happens to be at the moment. At first thought, the two centers of the COC might seem incongruous. There are several reasons for this grouping. One is that it makes a better span of control throughout the headquarters as a whole. A second is that the two functions could logically perform somewhat near each other in space. A third link is the Training and Replacement Group. This offers a prime source of troops to the Rear Area Security Center and, at the same time, is not so far removed from the Planning Group that directing training for future operations is complicated. Both centers of the COC are provided with War Rooms to keep abreast of the immediate situation and allow them to assume TOC duties if this should become necessary.

The fourth in command of the army controls the Service Operations Center (SOC). Although this group is provided with a War Room, it is largely for informational purposes. It would be necessary

to lose all three of the previously proposed centers before the SOC could assume command and then Army Group undoubtedly would give the job to one of the corps. This center has important and essential duties to perform.

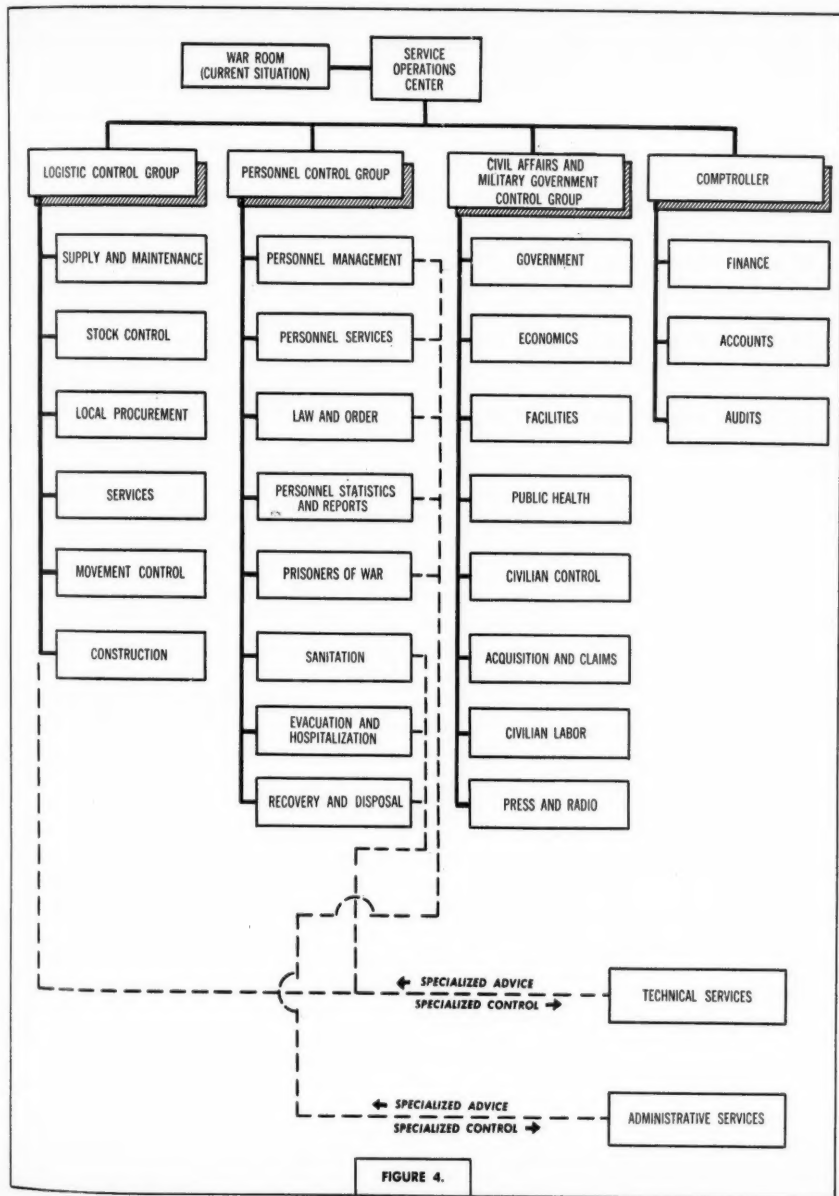
It may be that very few consecrated service people will agree with this staff concept. It relegates the arms and the technical and administrative services to staff advisors and widely disperses them. For instances, the engineer's combat support battalions advise and take direction from the Control Group of the TOC; his map depot works under the Intelligence Group of the Planning Center; his supply people are directed by the Logistic Control Group. Similar splits are made in all the services and, for that matter, in what generally is thought of as the general staff.

Organize as Needed

Critics may say that such a functional staff will destroy the technical staff concept, because it will force a common supply organization divorced from combat support functions and thus split most of the technical services right down the middle. While this might be a result if all staff echelons were to adopt this organization, it is difficult to visualize such an occurrence.

In the first place, all echelons of command should not adopt this or any other single staff system. The fetish that a battalion, division, and field army should all have the same staff organization is based on lack of imagination, not fact. The problems to be solved at each echelon differ greatly. For instance, it would be difficult and even dangerous to split the Planning and Operations Groups in division and lower level staffs. Similarly, Administrative Zone and Department of the Army staffs should be organized along far different lines. Relationships between technical and administrative services and the general staff would be somewhat different at each level of command.

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Examine this relationship for a moment. We say that the technical services are under the staff supervision of the G4. While this is well and good for the supply and logistic service functions, it does not make much sense in the combat support area. Nothing in this proposed staff organization changes the traditional prerogatives of the service chiefs. All that has been done is to formalize the chains of specialized advice to the staff elements that need it and of specialized control from the staff elements closest to the problem. This should not only get work done faster, but should also clear away some of the fog of war.

This "geographical staff" also has other advantages. It allows for dispersion without duplication and, at the same time, permits a very rapid assumption of duties in case one location is destroyed. In atomic warfare this is a very important ability

and one that has received far too little attention. It should also result in faster decisions because all elements concerned with any particular area of interest are organized together. It is no longer a question of G3 plans coordinating with G4 plans. Both of these groups now work under the same chief, and this chief is not a G1, 2, 3, or 4 man, he is an integrated planning man. Plans should not only be consummated faster, but should encompass full recognition of all facets of problems confronted.

Conclusion

In effect, many present staffs are organized as outlined in this article without realizing it. They achieve this close rapport through the committee system. It is time to formalize those informal channels that work together anyway and organize a staff built around the jobs that have to be done.

The Army is rooted deep in the American community. Its strength is the strength of the sons and the daughters of our American homes. One of the most important things each of us can do to aid in the defense of this great land against the perils confronting it today is to help in every way possible to develop in the young men and women growing up around us a profound sense of responsibility, an understanding of the value of their American heritage and how much it has cost in dedicated labor and unstinting sacrifice through the years, a love of honor and probity, and a deep and abiding trust in God.

Selfless devotion on the part of us all to the highest principles of our American faith and duty are more than ever the chief guaranties of all we hold dear. The world needs the faith of America, the faith that can inspire hope in an age of turmoil. The citizens of America in all walks of life, standing solidly behind their fellow citizens in uniform, constitute a force which cannot be beaten. We need not fear the future if we are alert, realistic, and resolute. In the unity of the American people, in their spiritual courage and conviction, lies our power for peace.

Secretary of the Army Wilber M. Brucker

FALLOUT AND THE COMPANY COMMANDER

Lieutenant Colonel John C. Hinchie, *Chemical Corps*
G3 Section, XIV United States Army Corps (Reserve)

THE impact of advances in the fields of science and engineering initiated during World War II has greatly affected concepts of the conduct of future military operations. This is particularly true in the areas of nuclear weapons effects on the art of ground warfare. Within this area a great deal of theoretical study has evolved some practical approaches to the problems of reducing the foot soldier's vulnerability without destroying his effectiveness. However, many unknowns which will influence the art of command remain to be solved on the battlefield. Among these is the phenomenon of *fallout*.

Fallout is the descent of radioactive debris back to the earth from the nuclear cloud. It may occur in the immediate vicinity of ground zero soon after the burst, or it may remain suspended in the air for long periods of time depending largely on the yield and altitude of the burst. Fallout is not uniformly distributed in the atmosphere and, therefore, its effects are not uniform on surface population.

Fallout Categorized

Three categories of fallout—*close-in*, *intermediate*, and *worldwide*—have been defined according to geographical distribution or to time required for descent. The difference in rate of fall and the area of distribution of these three categories of fallout result in differences in radiation dosages. Of these, close-in fallout is militarily significant because it reaches the

ground in a highly radioactive state, producing heavy dosage within a large area and within a few hours after the burst. Intermediate and worldwide fallout cover so much more area and arrive so much more slowly that most of the radioactive products have decayed to negligible levels of intensity. Surface or subsurface burst nuclear weapons normally are followed by close-in fallout. Approximately 50 to 80 percent of the fission products produced by the nuclear weapons are deposited on the ground within a few hundred miles of ground zero.

Current interim doctrine for ground atomic operations has accepted the Pentomic Division as a technique for the control of infantry units in battle. As the doctrine is advanced and improved, so also will the equipment and organization of the division be tested and improved. The effectiveness of the units within this organization will depend primarily on the quality of leadership assigned. Since the battle group with its rifle companies form the nucleus of the balanced force of essential arms and services required to carry out the division mission, the rifle company and its commander will be analyzed to determine their capability to function under conditions of fallout.

"To close with the enemy by means of fire and maneuver in order to capture or destroy him" is the goal which must constantly highlight all actions carried out by the rifle company under the leadership of

Thorough training in the characteristics of fallout, and countermeasures to be employed, must be conducted now prior to combat if units are to realize their effectiveness in the event of an atomic battlefield

its commander. The company must have the capability to fight in close combat; to repel enemy assault by fire; to counter-attack; to seize and hold terrain; to provide a base of fire and maneuver; and to maneuver on all types of terrain and in all climatic conditions. This performance must be accomplished under conditions where fallout may be encountered.

A close look at the Pentomic rifle company will reveal that its organic transportation will permit only 10 percent mobility. It should be emphasized that mobility is a relative entity that must be measured against the enemy capability for movement under similar conditions of terrain and weather. Normally, the type of terrain and the conditions of the weather to be encountered will dictate the equipment necessary for superior mobility. These conditions superimposed by fallout may alter the requirements drastically.

Reevaluate Approaches

Fallout may be likened to an invisible obstacle whose impenetrability depends upon the intensity of radiation. Thus a fallout area may be visualized as a hill—the steepness of its profile depending on the degree of contamination present, but which is either growing in size as

fallout continues to arrive or which is decreasing because fallout has ceased and the radioactive particles are decaying. Therefore, the presence of high levels of residual radiation forming an obstacle on erstwhile fine avenues of approach to the objective may cause a reevaluation of the means required to traverse an area.

Obviously, the effects of fallout must be countered by shielding and speed while in transit, or by the avoidance of contaminated areas. Air transport is immediately suggested as an optimum carrier because the residual radiation may be completely attenuated by sufficient altitude. Only minimum radiation dosage may be received due to the speed by which personnel are carried over the area. When air transport is not available, avenues of approach must be appraised carefully in relation to vehicular or foot travel. With the exception of tanks, armored personnel carriers provide the greatest protection against radiation by virtue of the shielding inherent in armor. When truck or foot travel is required, approaches must be selected which afford a minimum risk of receiving a significant radiation dose. Fallout that cannot be circumvented may force the unit to dig in and become immobilized.

Evidence has been presented that personnel who are physically exhausted may be subject more quickly to radiation effects. Therefore, it is necessary for the unit commander to take positive action to ensure that all his troops continually are exposed to physical conditioning until they can withstand the severest physical hardships and remain combat effective.

Tables of equipment now provide the Pentomic rifle company with one Radiac Meter, AN/PDR-39. This meter may be used to monitor personnel, supplies, or an area for the presence of radiation up to an intensity of 600 roentgens per hour. It is an interim instrument which should be replaced by the Radiac Meter, 1M-108PD, as soon as available. The company

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also has seven tactical dosimeters (Radiac Meter, *1M-93/PD*) for measuring total radiation received by an individual or group up to 600 roentgens. The company commander may use these meters to determine the radiation dose status of subordinate units or individuals. The cumulative dosimeter readings are a guide for limiting the radiation exposure of monitors and other operational personnel.

Test Platoon Areas

Operations on the atomic battlefield will be characterized by speed, swift maneuver, violent assault, rapid exploitation, and flexibility and dispersion both laterally and in depth. Consequently, it is safe to assume that rifle platoons and weapons platoons may not always be mutually supporting nor always in the same vicinity. Hence it would appear that in order to obtain a knowledge of the amount of radiation existent within each platoon area, each must possess at least one Radiac Meter *1M-108PD*, with one located at company headquarters.

Personnel within the unit must be trained to operate and maintain radiac sets. This is not a serious problem because neither a great deal of time nor technical skill is required. However, training must be accomplished in such a manner that at least two monitors are always available per radiac set. To ensure accuracy and consistency of results, the sets must be calibrated before use by mobile maintenance teams servicing the division. Recalibration is made every time a radiac meter battery or major component change is made, to include periodic calibrations. A survey meter may receive rough calibration by comparison of its readings with those of a calibrated instrument in a fallout field.

Monitor reports from the platoons will be continuously and periodically forwarded to the company commander or his designated representative. When a significant radiation is detected, the word will be

flushed to the regimental headquarters. If an area survey of the company is required, the company commander or his representative will become the control party. He then directs the platoon monitors in the survey operation. He will collect the survey readings and forward them to the S2 at regimental headquarters. This process is known as a decentralized area survey and will be conducted as required through command channels.

Monitor and area survey information is most important in determining the existence and extent of residual radiation. This information is useful to both the company commander and the regimental commander to estimate the capability of the unit to accomplish its assigned mission under the imposed conditions of fallout. When the level of intensity and effect of residual radiation is determined the unit commander must analyze the various courses of action within his control to perform his mission. If he is given a choice, he may elect to avoid the area, pass through, or dig in. His solution will hinge upon his mobility, the extent and intensity of the contamination, the previous exposure of his troops to radiation, and the capability of the unit to obtain or develop adequate shelter with the means at hand.

Avoid "Unreasonable" Fear

The residual nuclear radiation produced by the decay of radioactive isotopes contained within the close-in fallout can neither be seen, felt, smelled, tasted, nor heard. Man's natural senses cannot detect these insidious rays, even though harmful to him, without assistance from a device (radiac meter) which will measure these rays by indirect means. Consequently, residual nuclear radiation is an unknown and because of man's natural fear of the unknown, serious psychological repercussions may be expected when he first encounters fallout.

These psychological aspects will prove

most difficult to deal with because they invoke unreasonable fear. Reasonable fear is useful. Reasonable fear makes us avoid burning by fire and injury from normal hazards. Residual radiation ranges from insignificance to considerable military impact. Because it affects each man personally, it can become a powerful psychological reflex which can create panic and chaos on the battlefield which would be fatal to the unit. This must be overcome by prior training in the understanding of the radiation phenomenon, the defense against its effects, and a secure system of monitoring and area survey. Troops must be conditioned to accept fallout as they accept the air they breathe. It must be considered as a normal part of the battlefield environment. Fallout demands respect, but is unworthy of fear.

Rain may be expected to increase the amount of fallout found in a local area. A low-yield nuclear cloud, forming at or below the level of rain clouds, will be affected by the rainout phenomenon. Active particles from nominal or higher yield clouds gradually will settle into the rain levels below and then will be washed out by the rain. The natural washing effect of rain on terrain itself will cause a redistribution of radioactive particles once they have fallen. Depending on the duration and intensity of the rainfall, hill tops and hill slopes will be found to be washed comparatively free of fallout, concentrating the residual radiation in hollows or streamlines. Therefore, the unit commander must be wary of defilades and streamlines to ensure that no significant residual radiation is present.

Fallout particles are not very large. Individually, most of them are as small or smaller than a grain of salt. As a result, each particle is very susceptible to the action of a surface wind once it has fallen. It can be blown into truck beds when lifted as dust on the road. It can drift and silt into foxholes and armored carriers or other

shelters. It is difficult to control and hard to expel. The utmost imagination and field expediency of the soldier will be required to combat this hazard. All the equipment of the unit must play a part in countering radiation effects. Such matériel as masks, clothing, shelter-halves, shovels, axes, food containers, and the many other items contained in the unit tables of equipment must be examined for possible uses in the defense against fallout.

Know Exposure Limitations

Statistically, an established median sickness dose has been defined when half the personnel exposed to a certain radiation dose become radiation casualties. These are acute manifestations of radiation injury. It is also known that this median sickness dose varies with each individual and with the rate of exposure he suffers. It may occur as low as 100 roentgens for very rapid exposures and higher than 200 roentgens for low rates of exposure. It also is dependent upon the amount of previous exposure suffered by the individual.

A knowledge of the limitation of exposure that each individual in the unit may withstand before he becomes a casualty is most important to the unit commander from the view of employment of the individual in a fallout field. As an example, a platoon used as a maneuver unit passing through a field of high intensity of radiation for a prolonged period, receiving a radiation dose above its tolerance limit, could become acutely sick within a few hours and unable to take its objective. This may be disastrous to the company mission.

A means must be found to classify individuals and units according to previous radiation exposure. It has been suggested that each individual carry a dosimeter which can be checked periodically and immediately after every operation to determine the amount of radiation each man received during the period of exposure. This

reading is then placed on the individual's personnel record where it may be reviewed, as required, to determine the amount of radiation service the man can be subjected to safely. If the individuals are then classified into radiation groups and organized into squads or platoons which can be labeled with the maximum radiation to which its members may be subjected to reach a maximum tolerance dose, then a system to safeguard operations and a means to expedite replacement based on radiation dose can be initiated.

Conclusions

The rifle company is lacking in organic mobility and radiac and auxiliary equipment to conduct a war of movement successfully when fallout is employed. Equipment to detect, measure, and determine the rate and amount of residual radiation present is required. The unit should have, on call, requisite mobility to be able to bypass significant fallout hazards. All per-

sonnel must be classified according to previous radiation exposure, so that they may be organized into similar radiation tolerance level operational teams. All members must be hardened to endure the severest mental and physical strains. Each man must be taught, by means of anticipatory training exercises, to perform his functions without unreasonable fear of radiation. The unit must live and fight as a team in a new environment where weather and terrain are controlling factors in determining residual radiation hazards.

The testing of a unit under fallout conditions cannot wait for the battlefield. All preparations to meet this new challenge must be completed prior to combat. The spirit of confidence and the cohesive integrity with which the unit will conduct itself under the intangible hazards of fallout will reflect the competence, judgment, and force with which the company commander renders his decisions.

It may well be that, for the Army to carry out its mission successfully under conditions prevailing in the future, changes will be necessary in both methods and equipment. While it would probably be wrong to predict that it will not be feasible to employ massed armor in the manner made familiar in Western Europe during World War II, it is possible that such concentrations will only be able to operate effectively in areas which are more extensive than was previously the case. Certainly, with less well-defined distinctions between the combat zone and the rear area, reconnaissance and screening missions will become more vital than ever.

Close integration between the use of tanks and missiles, with the armor moving rapidly to exploit the effects of the missiles by its own firepower and shock action, will be essential. Unquestionably, it will be desirable to enhance armor's firepower with atomic weapons. Increased mobility must also be sought, perhaps through the development of lighter tanks, perhaps through improved engines or better fuels. Another aspect of that subject, but an equally vital one, concerns the development of more easily handled fuels and more effective methods of delivering them.

General Lyman L. Lemnitzer

THE SOLDIER'S NEW SIDEARM: LANGUAGES

Colonel Walter E. Kraus, *Artillery*
Commandant, United States Army Language School

IN HIS message to Congress last February, President Eisenhower called attention to a relatively unknown national deficiency that threatens this country's security: the shortage of skilled linguists. The President said:

Knowledge of foreign languages is particularly important in the light of America's leadership in the free world. Yet the American people are deficient in foreign languages, particularly those of the emerging nations in Asia, Africa, and the Near East. It is important to our national security that such deficiencies be overcome.

The Army was aware of this situation many years ago, practically as the Japanese Fleet set sail for Pearl Harbor. Feeling that war with Japan was imminent, a few farsighted officers established a school to train loyal Nisei as translators and interpreters. Throughout World War II, despite inadequate facilities, the school produced a body of linguists who contributed immeasurably to American successes in the Pacific theater of operations.

The lesson learned from this eleventh-hour measure was not lost. Rather than suspend language training at the close of World War II, the Army found it had to step up the program in order to keep pace with changing conditions around the

globe. Our world commitments had multiplied. The shadow of Communist expansion fell across Europe and Asia.

Today, the Army Language School is operating in full swing at the Presidio of Monterey, California. It is the sole institution in the Army currently equipping officers and men with the practical skill needed to discharge military duties requiring knowledge of a foreign language. Each year nearly 2,000 students are graduated from the school's 28 language departments in preparation for assignments as military attachés, staff officers with military missions and advisory groups, and military intelligence specialists.

Language for Understanding

Knowledge of foreign languages is indispensable to Army personnel in the conduct of relations with allied countries in this era of prolonged international tensions. Recognizing that collective defense offers the best chance for security, free nations of the world have pledged mutual military and other assistance in case any one nation is attacked. At present, we are allied with over 40 nations of the free world and, in addition, assist in the training of some 200 allied divisions and have relatively large troop units on guard in Europe and Asia.

These collective security pacts are

Worldwide commitments require that Army personnel be familiar with foreign languages to further international relations. The Army Language School effectively trains such personnel in any one of 28 languages

meaningless unless nations of the free world have the will and military efficiency to demonstrate that aggression offers no advantage to any nation contemplating attack.

Joint security of this kind makes certain demands on the Army. A total of 43 advisory groups and training missions now are in operation and the Army furnishes courses of instruction, mobile train-

unless all key personnel can speak the language of the country in which the organization is located. To ignore the necessity of such training is to be guilty of a linguistic complacency highly unbecoming to our new role of global leadership. The effective cooperation of free nations depends considerably upon the ease with which American military concepts and strategy are translated not only into other



Aerial view of the Presidio of Monterey, home of the U. S. Army Language School

ing teams, and technical representatives in support of allied military power. To be truly effective, these units must achieve maximum communication at every level of operation. Since this, of course, involves other languages, the degree of success depends to a great extent upon the degree of understanding. This situation, naturally, demands a continuing supply of competent linguists if we are to attain peak efficiency and cooperation.

It is impossible to consider missions or advisory groups to be adequately staffed

languages, but into other thought patterns as well.

Practical Mastery Provided

Because of this, students at the Army Language School do not spend their time reciting verb conjugations. The purpose of the school's program of instruction is to provide students with a practical mastery of a foreign language.

It is the theory in most colleges that for each hour of class work, the student is expected to study two hours independ-

ently. That ratio is reversed at the Army Language School. Here, a student spends six hours in class, five days a week, and is expected to study at least three hours each night.

Learning to speak a foreign language is not done by memorizing a body of facts. Mastery of the spoken language is a skill achieved through constant practice—

guage of the country to which they will be assigned, these key members of the ambassador's staff are well-equipped to discharge the duties of an attaché. Their wives also are given an opportunity to study at the Army Language School, for the Army has realized that a wife is an important member of the team at an embassy overseas. These wives undertake the



Headquarters Building, U. S. Army Language School

learning by doing. For the great majority of students, regardless of age, educational background and aptitude, early fluency, and maximum assimilation of the new language are obtained by having them acquire, as soon as possible, a feeling for the language.

This easy familiarity with the language is of prime importance, for students come to the Army Language School from virtually all walks of military life and leave it for a great variety of duties.

Many of the officer students are attaché designates and after studying the lan-

same intensive program of instruction as their husbands.

Two Programs Available

Key officers of military missions and advisory groups also are sent to the Army Language School to acquire the language skill the Army regards as organic to the qualifications of such men. The opportunity afforded attaché wives also is open to the wives of mission and Military Assistance Advisory Group (MAAG) officers.

For those officers who are not scheduled

for assignments demanding foreign language skills, there are two distinct training programs available for anyone wishing to volunteer for language training. The first is the Foreign Area Specialist Training Program.

The first year of training is an intensive study of the language at the Army Language School. A year of study at a

ular 621-15, *Language Training Quotas for Officers*, February 1958.

One of the newest Army Language School facilities which will soon be operational is the department of nonresident instruction. This extension division will offer refresher language training to personnel of active US units as well as to members of Reserve units who have for-



New academic building, foreground, and new 440-man enlisted dormitory in background

civilian university follows, and the final two years are taken at one of the Army's overseas schools in Turkey, Greece, Germany, Japan, or some other country, depending on the language and the area of specialization.

The second program is one which has the approval and encouragement of General Maxwell D. Taylor who has urged all career officers to acquire proficiency in a foreign language. Particulars on the breakdown of classes for which officers may volunteer in Fiscal Year 1959 are given in Department of the Army Cir-

eign language abilities and wish to keep them up through individual study.

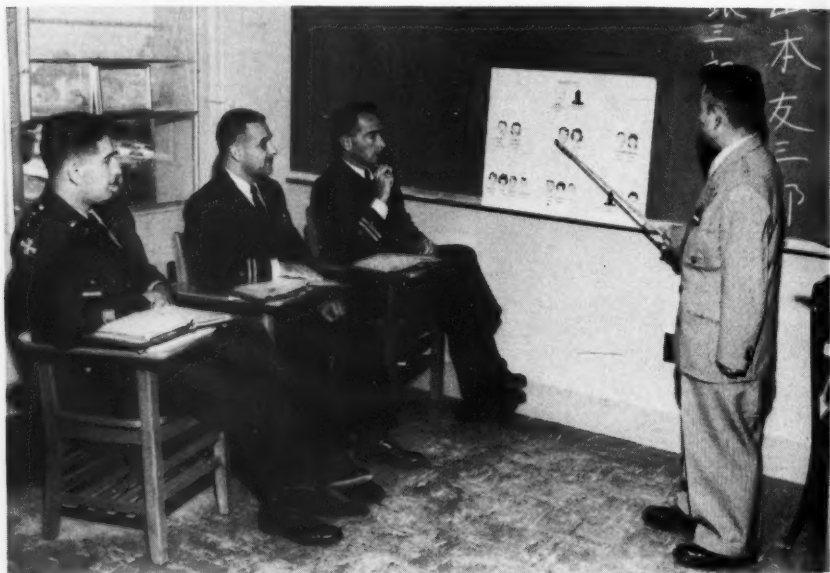
The Army Language School theory of instruction paid handsome dividends during World War II. Never before in history did one army know so much about its enemy prior to actual engagement as did the American Army during most of the Pacific Campaign.

Translate War Plans

Graduates of the first language school translated the entire Japanese battle plans for the naval battle of the Philip-

pires. These plans were captured from the Commander in Chief of the Combined Japanese Fleets when the plane carrying him to his flagship was forced down in the Philippines. The Japanese suffered almost total annihilation and the worst defeat in naval history in the San Bernardino Straits and off the northeast coast of the Philippines. Likewise, complete Japanese plans for the defense of the

By June 1946 the school had graduated more than 6,000 men who served in some 130 different Army, Navy, and Marine Corps units and on loan to our allies. Many were attached to the Joint Intelligence Center, Pacific theater, with headquarters in Hawaii. Teams of at least 10 linguists were selected for headquarters assignments with more than a score of infantry divisions in the Pacific. Other lan-



Army and Navy officers studying Japanese at the U. S. Army Language School

Philippine Islands also were discovered through the work of graduates long before our forces had landed on Leyte.

The school has seen four locations during its 17-year history. After the first class had been graduated, the War Department moved the school to Camp Savage, Minnesota, and placed it under the direct jurisdiction of the Assistant Chief of Staff, G2. The school at Camp Savage expanded considerably as the war progressed and, in 1944, maintained a faculty of 27 civilian and 65 military instructors.

guage teams were assigned to the Joint Intelligence Collecting Agency which later combined with British Intelligence to form the Southeast Asia Translator and Interrogator Center in New Delhi, India. Teams were assigned to Merrill's Marauders, Mar's Task Force, Far Eastern Air Forces, and the China-Burma-India theater. During the Attu and Kiska Campaigns in the Aleutians, nearly 50 graduates were working from the Advance Alaskan Department in Adak.

Widely used in World War II, the lin-



Students acquire better comprehension of foreign language by audio-visual methods

guist is of equal if not greater importance to the modern army and the army of the future. Dr. Edward Teller, father of the

Colonel Walter E. Kraus was graduated from the United States Military Academy in 1929. He was sent to Spain in 1936 to study Spanish in preparation for duty as an instructor at West Point where he served until 1941. From June 1941 to December 1944 he served as a battalion commander training men for overseas combat. Later he went to Fort Sill where he was in charge of the Advanced Officers' Course in Gunnery. In June 1945 he took a battalion of 155-mm guns to the Pacific and subsequently served three years in Japan as a staff officer of the IX Corps and as Military Governor of Miyagi Prefecture. In 1948 he went to the Armed Forces Staff College and from there was in charge of the Organization Section of G3 at the Pentagon. In April 1951 Colonel Kraus became Chief of Training, Headquarters, US Army, Europe. He assumed his present assignment as Commandant of the United States Army Language School, Presidio of Monterey, California, in September 1954.

H-bomb, showed a keenly perceptive interest in language training during a visit to the Army Language School on the same day the announcement of the *Sputnik* satellite launching shook America to the foundation of her complacency.

Language Skill Vital

In Dr. Teller's opinion, the atomic age calls for a highly skilled professional Army. In case of war, to exploit and secure the great advantage of nuclear weapons, combat groups must contact foreign civilian populations, seeking their cooperation. To carry out such missions, the



Students of Spanish learn banking ways of South America

single most important skill is the knowledge of the particular language, Dr. Teller observed.

With the Army fast becoming streamlined for greater flexibility, officers and noncommissioned officers will have to accept more and more responsibility outside their special fields. Adeptness in

speaking a foreign language certainly will be an intellectual sidearm indispensable to the Army man of tomorrow.

Actually, "tomorrow" is a misleading word. The need is critical today. The lesson in preparedness learned from *Sputnik* applies to languages, too. A recent Soviet text states Red Army aims for all to see:

A Soviet officer must be stronger in technique than his enemy. He must know especially mathematics, physics, and foreign languages.

Here is a clearly stated challenge. The Soviets obviously recognize that contemporary development of military science makes heavy demands upon the modern officer, and to satisfy these demands it is

necessary not only to improve existing weapons and refine their usage, but also to follow the development of armaments among foreign armies. To keep abreast of new techniques, the Reds have stepped up language training for officers.

The Army and civilian educational systems must match the Soviet effort in order to meet this challenge. Hitherto, America has shown only a limited interest in language training: only 165 of this country's 1,800 colleges teach Russian to a mere 4,000 students. By contrast, 10 million Soviet students study English.

Considering the gravity of world conditions, the preparation of specialists in languages is imperative.

It is always well to remind ourselves of the present extent of our commitments. We have pledged ourselves to assist, under varying terms, some 50 foreign nations that may be threatened by Communist aggression. We are participating members in 12 regional pacts, designed to develop collective strength to oppose aggression. Under the Military Aid Program, we are providing assistance to 43 countries, whom we regard as friends and allies. In many of these countries we maintain military missions for the purpose of assisting in training their troops to use our equipment. For example, the United States Army today is engaged directly, or indirectly, in the training of some 200 foreign divisions. These data are suggestive of the extent of our current foreign commitments and the need to verify from time to time that we do indeed have ready strength to make good on these commitments if ever they should fall due, singly or together.

General Maxwell D. Taylor

USAR Schools on M-Day

Colonel Lynn D. Wallace, *United States Army Reserve*
Commandant, Buffalo United States Army Reserve School

MOBILIZATION plans of the Armed Forces undergo constant revision in order to keep them current, practical, and effective. Current mobilization plans include the utilization of assigned United States Army Reserve school (USAR school) students as individual reinforcements to tables of organization and equipment (TOE). Staff and faculty members of USAR schools, it is contemplated, will be employed as augmentation fillers and reinforcements for instructional and administrative staffs of service schools. However, the failure to include in current mobilization planning a place for the USAR school as an organized and functioning unit is considered to be erroneous.

In visualizing the conditions under which the forces of the country would have to be mobilized in any future emergency, it appears that each section of the country would have to be organized and prepared to be self-sufficient; therefore, to this end, mobilization planning should provide for decentralized commands. Adequate plans should provide organizations and operations so that in the event of serious isolation, armies and perhaps even corps would be able to complete their mobilization training and to conduct operations without the assistance from other sources not found within their own respective areas. If this premise is true, the necessity for planning adequate educational facilities for these areas is obvious.

No unit commander will be able to give proper and adequate courses of instruction to citizen soldiers during the mobilization period. For many of those citizen soldiers who are in the commissioned grades, a refresher course during this mobilization period will be a *MUST*. It also will be necessary to educate a large number of officers for positions which require specialized training. The emphasis on the utilization of the younger officers undoubtedly will be stressed. For this reason unit commanders will be seeking a means whereby junior officers, particularly those receiving recall to active service after a period of inactivity of several years, may receive an up-to-date military education which will make them proficient and permit them to carry on the various tasks which a mobilization will require.

Commanders will realize immediately that they do not have the facilities to conduct such an educational program within their own units. No TOE combat unit has the facilities or faculty to conduct an adequate program of this kind. They do not have readily available trained instructors, and they do not have readily available a program of instruction or the materials with which to carry out a program of instruction, if it were available. These deficiencies, if corrected, would not overcome the inability of troop units to spare the officers from their assigned duties to be the instructors in such courses.

Failure to use organizations in USAR schools in mobilization planning is a failure to consider past deficiencies which must be corrected by furnishing adequate means for providing professional military knowledge

Service Schools Limited

It is admitted that service schools if not made ineffective by the ravages of a war which resulted in the emergency and caused the mobilization would, to the extent of their facilities, do a much better job than could be hoped to be achieved by the utilization of the USAR schools or any other means. However, in the event of a general mobilization, the resources of these service schools would at least be limited. They would not be able to supply the need created by the general influx into the various TOE units of officers, comparatively inactive during years of peace, who suddenly find themselves assigned to a tactical unit and need a short and intensive refresher course.

It is believed that the USAR schools, as presently organized, could constitute a nucleus around which mobilization plans could be prepared so that within every Army area the educational requirements imposed upon that Army by an emergency mobilization could be provided.

USAR School Potential

It should be pointed out that the USAR schools collectively in any Army area have a tremendous potentiality. In the First Army there are at present 23 USAR schools. Within the Continental Armies there are an average of 22.4 USAR schools per Army. These schools have faculty officers who have been teaching courses for every branch of the service and that prescribed by the U. S. Army Command and General Staff College. Most of these offi-

cers are field grade officers. Many of them have spent long years becoming proficient as instructors of military courses; they are intimately familiar with the type of work which can be accomplished in the classroom and the type which can best be accomplished in the field. What is more important, they are familiar with the current course of instructions being given by their respective service schools and they normally have all of the material which would be needed to teach a complete course for any given branch, including the U. S. Army Command and General Staff College.

This is advantageous for the reason that, in the event a particular area should become isolated or a particular service school became obliterated, it would be possible through proper utilization of the facilities, manpower, and materials of the USAR schools for any Army commander to have an efficient and effective school or school system properly organized within his Army area. It is appreciated that the limitations imposed upon the schools in the event of such mobilization would be tremendous; nevertheless, many of these limitations could be overcome through local reproduction of all the material required of a given course. By proper planning the mobilization of these schools should in no way interfere with the orderly mobilization of TOE units.

In some Army areas a responsible USAR school during its summer Army unit training (AUT) has attached to it, for administrative purposes, the staff of one or more schools, and the responsible school conducts courses during this AUT period for several branches. In other instances a responsible school, assisted by another school, may conduct courses (one or more) in one specific branch. By careful planning and constant revision it is believed that a mobilization plan could be developed whereby a certain unit would be designated as a responsible school on M-day to organize a USAR school assisted by administrative personnel taken from other USAR

Colonel Lynn D. Wallace is a graduate of the Arts College, University of Buffalo (B. S. 1926), and Law School, University of Buffalo (LL. B. 1929). He served on active duty with the Army from September 1940 to May 1947. He was assigned to the faculty of the U. S. Army Command and General Staff College from January 1943 to May 1947. Colonel Wallace now is the Assistant Chief Attorney, Buffalo Regional Office, Veterans Administration, Buffalo, New York, and Commandant of the Buffalo US Army Reserve School.

schools as required. Such a school could be ready to receive personnel for refresher training in a very short time.

These mobilization plans would have to include classroom, field exercise, housing, and messing facilities. If the plans for mobilization were well-conceived, it is believed that they should make the maximum use of commercial facilities in those areas where military industry is lacking. Therefore, the presence of these schools in any area would not interfere with the military effort.

Conclusion

The details to be worked out in the mobilization planning are not essential for the purpose of this article. However, the failure to use the organizations found in

the USAR school and particularly the faculty of such schools will prevent their full utilization in an emergency. The majority of instructors of any USAR school are officers who, because of their extensive knowledge, are sought after by many unit commanders, and in an emergency mobilization expansion it is not believed that these officers would be available for instructional purposes unless they were mobilized immediately as part of a USAR school. The failure to include the USAR schools in mobilization planning is a failure to consider past deficiencies. These deficiencies undoubtedly will crop up in the future unless corrected by furnishing adequate means for providing professional military knowledge.

The fateful issue of peace or war rests with the aggressor. This being the case, the United States must of necessity build military forces on a long-term basis. We must have combat-ready Armed Forces of all services, and an adequate force of trained manpower and Reserve units to reinforce those forces. In view of the continuing and multisided nature of the Communist threat, our defense program is geared to that concept.

In any future emergency it is probable that our country will be denied the time to develop and train its Reserves after the outbreak of hostilities. Consequently, our survival as a nation may depend upon an adequate and Active Reserve to complement our forces in being. The finest weapons and techniques can be effective only when used by trained individuals in properly organized and trained units.

Admiral Arthur W. Radford, Retired

MILITARY NOTES

AROUND THE WORLD

UNITED STATES

Dock Cargo Ship

The *Point Barrow* dock cargo ship (AKD) displaces 5,562 tons light and 14,094 tons fully loaded. The big well deck of the AKD, which is 370 feet long and 48 feet wide, can be flooded to a depth of eight feet in a 30-minute ballasting operation, and can accommodate three LCU's which in turn can carry smaller LCM's. Both the LCM and the LCU are used for lighterage work in the Arctic. Unlike LSD type craft, the *Point Barrow* is built to steam far into the icy waters of the north. Special protection includes a reinforced bow and special insulation. The vessel is scheduled to participate in arctic operations.—News item.

Lightweight Litter

A lightweight litter that can be carried in a folded package by medical corpsmen when on patrol and unfolded when needed for medical evacuation is under test. A prototype of the folding litter is constructed by telescoping sections of aluminum tubing fastened together to form a rectangular pattern. Lightweight neoprene-coated nylon fabric is suspended hammock fashion within the frame. It weighs four and one-half pounds and folds into a package of about one-third of a cubic foot.—News item.

Satellite Base

The Wallops Island missile test base in Virginia is to be used for satellite launching. Rockets up to the size of *Thor* and *Jupiter* ballistic missiles will be used to launch satellites up to 100 pounds in weight from the installation. Two launching pads, capable of handling large-size rockets, are planned for early construction. More than 3,000 rockets have been fired from the Wallops Island test station since 1945.—News item.

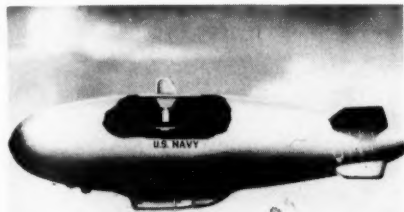
Jet 'Monte-Copter'

The light, two-place helicopter called the *Monte-Copter Model 14* is powered by two jet engines installed in pods on each side of the fuselage. The engines provide compressed air which is fed through the two rotor blades to tip-mounted jet nozzles. In this arrangement the motors and the rotor are not geared together, making the *Model 14* much less complex and keeping moving parts to a minimum. The tip-jet helicopter, which weighs 1,000 pounds empty, can carry a useful load of 400 pounds. Many of the components are made of aluminum; fiberglass also is used extensively in its construction. The lower half of the outer shell of the fuselage is designed in one piece of fiberglass to make the aircraft amphibious.—News item.

Big Airship

Claimed to be the largest nonrigid airship ever built, the first of a series of lighter-than-air craft—designated the ZPG-3W—is under test. It is reported to be at least 50 percent larger than its predecessor, the ZPG-2, which has an envelope volume of almost one million cubic feet.

The ZPG-3W carries a crew of 21 and will be equipped with the latest electronic detection apparatus. The radar antenna



US Navy Photograph

ZPG-2W with inclosed radar antenna

of the big airship is mounted inside the envelope. This system was first tried out with a ZPG-2W antisubmarine craft modified for early warning work. This type airship holds records for both distance and endurance for lighter-than-air craft (MR, June 1957, p 67). An airship of this type recently conducted flight operations near the North Pole in a test that is said to have been an unqualified success.—News item.

'Hound Dog' Plans

The GAM-77 *Hound Dog* (MR, Sep 1958, p 76) is an air-to-surface missile which will be launched from its pylon mount on the B-52G while hundreds of miles from the target. The missile is powered by a J-52 turbojet engine of 7,500 pounds thrust which is carried in a pod below the rear of the missile, and which

will attain a speed of about Mach 2.2. The *Hound Dog* is 45 feet long and has a wingspan of 25 feet. The pylon, by which the GAM-77 is mounted under the wing of the *Stratofortress*, contains the monitoring and launching equipment for the air-to-surface weapon.—News item.

'Mohawk' Procurement

The Army has ordered 35 *Mohawks*, a twin-engine turboprop observation plane especially designed to meet Army requirements. The heavily armored *Mohawks* are equipped with facilities for mounting armament such as rockets and machineguns. Built to operate from unimproved fields, the 7,700-pound two-place aircraft will have a speed in excess of 230 miles an hour, and the same short takeoff and landing capabilities as the Army's present single-engine aircraft.—News item.

'Big E' Scrapped

The World War II aircraft carrier *Enterprise*, made obsolete by modern aircraft and fighting methods, is to be dismantled. The *Big E*, once known as the "fightingest" carrier in the fleet, participated in 20 of the 22 major naval engagements in the Pacific in World War II, accounting for 911 enemy aircraft, 71 ships sunk, and another 192 vessels damaged or probably sunk. The 25,500-ton *Enterprise* was commissioned in 1938.—News item.

More Loran Stations

Ten new loran stations have been authorized for the United States Coast Guard. Six of these units will be of a newly developed and highly accurate type, longer in range than the standard loran installation. Loran (long range aid to navigation) is a system of electronic navigation which provides lines of position by measuring on board ship the difference in time reception of simultaneous radio signals emitted from a pair of loran stations ashore.—News item.

'Nike' Operations

The California National Guard's 720th Antiaircraft Missile Battalion has been assigned four *Nike* sites in the Los Angeles area. This inaugurates a program for operation of air defense missiles by National Guardsmen. Other states in which guardsmen will take over the operation of some anti-aircraft missile installations are: Connecticut, Illinois, Massachusetts, Maryland, Michigan, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Virginia, Washington, Washington, D. C., and Wisconsin.—News item.

Air Transportability

Advances in air transportability include the paradrop of a 2½-ton truck, the helicopter transportation of *Honest John* rockets, and the development of air-droppable tractors. The 2½-ton truck was lowered safely to earth by six parachutes



US Army Photograph

A 2½-ton truck is safely paraded

in an experimental drop from an altitude of 1,500 feet.

The air-droppable tractors are designed in two versions—rubber tire and crawler.

These lightweight machines are ballasted with dirt after the parachute delivery. They can be disassembled into sections and reassembled for different configurations; for example, using earth augers or cranes. These tractors are said to be capable of twice the workload of similar size conventional machines.

Tests of the *Nike Ajax* and *Hercules* systems have revealed that both of these operational air-to-ground rockets with



US Army Photograph

An *Honest John* rocket can be carried with ease by a *H-37 Mojave* helicopter

their associated equipment also are air transportable. Any piece of equipment of the *Hercules* system could be carried in a *C-124 Globemaster* aircraft. The *Hercules* weighs about five tons, and is fired from a six-ton launcher. The *Ajax* system has been equipped for either air transport or for moving on the ground on its own wheels. The *Ajax* can be set up and ready to fire within two hours after its arrival at the place of its intended use. The *Hercules* takes considerably longer to be prepared for action after its arrival.—News item.

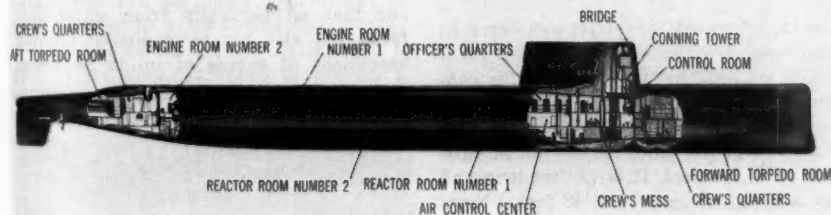
Submarine Progress

The picket submarine *Triton* is the eighth nuclear-powered underseacraft to be launched out of a total of 33 such vessels already built, under construction, or authorized for construction. The *Triton*, the largest submarine ever launched, also is the first of the new submersibles to require two atomic reactors and the first undersea vessel to have three decks. The *Triton* is 447 feet long and carries a crew of 145. The vessel officially is listed as displacing 5,900 tons, but will displace 8,000 tons submerged.

The *Skate*, the nuclear-powered sub-

uses an inertial guidance system that was developed for the discontinued X-10 *Navaho* surface-to-surface missile project. This same navigation system also will be used in the nuclear-powered *Polaris*-launching submarines. The first *Polaris*-carrying submarine is scheduled for commissioning in December 1959, and the second in March 1960. A total of nine of these missile-firing submarines has been authorized, of which five are currently under construction.

The feasibility of the development of giant cargo-carrying submarines is under study by two United States firms. The



Cutaway view of the *Triton*

US Navy Photograph

marine that crossed the North Pole under the arctic ice just eight days after the *Nautilus* had completed the first such transpolar trip, traveled 31 days on an 8,000-mile cruise without surfacing. The record for continuous submergence is held by the *Seawolf*, a sister ship of the *Skate*. The *Seawolf* logged more than 13,700 miles while staying below the surface of the sea for a period of 60 days.

It has been revealed that the *Nautilus*

development of this type of submarine also is underway in Great Britain, where an 80,000-ton submersible is under consideration, and in Japan (MR, Mar 1957, p 71).

West German, British, and American firms are testing the possibility of using plastic sausage-shape bags for the transportation of oils or other liquids, towed beneath the surface of the ocean by nuclear-powered tugs.—News item.

Twin-Jet Utility Aircraft

The *Sabreliner*, a twin-jet utility trainer and transport aircraft developed for a specific Air Force requirement, has completed initial flights successfully. Designed to permit pilots to maintain combat flying proficiency, the craft can be operated at about one-third the cost of older aircraft now in use on similar missions.



Sabreliner in initial test flight

The 15,330-pound *Sabreliner* can carry as many as 10 persons on cross-country flights, and is able to fly across the continent with a single refueling. It is powered by two *J-85* turbojets which give it a speed of 500 miles an hour at an altitude of 45,000 feet. It is 43 feet long and has a swept-wing span of 42 feet.—News item.

Refresher Courses

The U. S. Army Command and General Staff College is offering a "packaged" home-study refresher course to officers graduated from the College in previous years. The "package" consists of several correspondence subcourses from the College's extension course program, and has been designed to bring the student up to date. The offer permits a student to select the subcourse applicable to his present assignment, or he can request the College to recommend a refresher program for him based on his military and school assignments since graduation from the Regular or Associate Courses of the USA CGSC. Any qualified officer can enroll no

matter where he is stationed; it has been estimated that a student can complete the "packaged" course in about seven months by devoting only a few hours a week to study. Among subcourses from which an officer may choose are those concerning the reorganized armored, airborne, and infantry divisions, and their operation. Other recommended subcourses are Nuclear Weapons Employment, Army Aviation, and the Army-Air Force Team. Applications should be submitted to the Department of Nonresident Instruction, USA CGSC, Fort Leavenworth, Kansas.—Official release.

'Seacopter' Tested

A *HUP-2 Retriever* helicopter has been fitted with floats and a watertight hull and renamed the *Seacopter* by the United States Navy. The craft not only can land and take off vertically from water surfaces, but also has accomplished landing operations at speeds of up to 15 knots.

The *HUP-2* is equipped with an automatic pilot as primary controller. This



US Navy Photograph

Seacopter in landing test

permits the elimination of the tail stabilizing surfaces used in earlier versions. The *HUP-2*, fitted with submarine-hunting sonar equipment was the first anti-submarine warfare helicopter to go into service, and also is used for rescue and utility duties. This type of helicopter also carries the designation of *H-25A Army Mule*.—News item.

Revised Plans

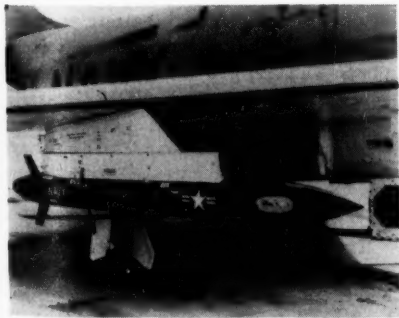
Plans for a nuclear-powered icebreaker for the United States Coast Guard (MR, Nov 1958, p 75) have been discontinued.—News item.

Air-Droppable Grenade

A recently patented grenade is designed to be dropped from an aircraft into the path of advancing enemy troops or infiltrators. The grenade contains a time-delay mechanism which functions at a predetermined time after the grenade contacts the ground, ejecting grapnels and connecting trip wires. The trip wires are attached to detonators in the main explosive charge of the grenade.—News item.

Remote-Controlled Aircraft

The Navy's propeller-driven *KDB-1* target aircraft has flown to a height of more than eight miles to establish a high-altitude record for remote-controlled targets of its class. Designed to provide a realistic target for both surface-to-air



US Navy Photograph

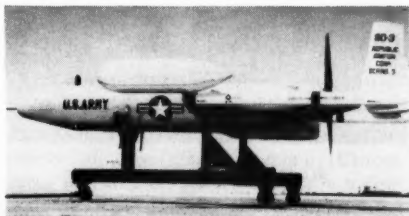
KXKDT-1 high-speed target drone

and air-to-air weapons systems evaluation, the 600-pound *KDB-1* is capable of a speed of 345 miles an hour, an endurance in excess of one hour, and has a remote-control range of 33 miles.

The recoverable jet-propelled target

XKDT-1 Teal is used in training jet fighter pilots in air-to-air combat. The *XKDT-1* is powered by a long-duration jet engine and is equipped with a self-contained guidance system to keep it on a constant course and altitude during its powered flight. It is capable of altitudes of over 50,000 feet and a speed of near Mach 1.

The *SD-2* combat surveillance drone is constructed of laminated plastic. It is used in an all-weather combat surveillance system to provide commanders with information of the battle area. The plastic construction permits easy replacement of parts or repair by field maintenance crews of the combat units. The system, which includes the *SD-2* drones, checkout



US Army Photograph

SD-3 combat surveillance aircraft

consoles, launchers, ground control system, and other related equipment, can be transported in two standard Army 6x6 trucks with attached trailers.

The *SD-3* surveillance drone is a propeller-driven, remote-controlled vehicle which uses interchangeable nose units to permit rapid change from one surveillance device to another. It is zero length launched and recoverable.—News item.

Purple Heart Order

A congressional charter has been granted to an organization called the Military Order of the Purple Heart. The charter limits membership to persons who have received or are eligible to receive the Purple Heart medal.—News item.

Cargo Helicopter

The *Model 120* helicopter is reported to be able to lift more weight for its size than any similar aircraft. The *Model 120* has an empty weight of 2,400 pounds and a maximum takeoff weight of 6,300 pounds, giving it a useful payload of 62 percent of gross weight. The rotor of the aircraft is driven by pressure jet burners mounted on each of the three rotor tips. Compressed air is ducted through the rotor hub and blades to the pressure jets where fuel is injected and burned. Compressed air for the system is provided



Model 120 cargo helicopter

by three *GTC-85-35* gas turbine compressors. The three engines give it multi-engine reliability since the *Model 120* can maintain level flight at maximum gross weight with one of its engines inoperative. They are mounted at shoulder height and can be changed in five minutes. Cargo is carried suspended from a pilot-controlled cargo hook located directly under the rotor. In addition to the pilot, 12 passengers can be accommodated on seats provided by a "personnel" kit which also includes an enclosure to protect the occupants from the wind.—News item.

AUSTRALIA

Train Fire Fighters

Air Force firemen from India, Indonesia, Ceylon, and North Borneo have received training in fire fighting in Australia under a new development of the Colombo Plan. The Asian firemen were

trained alongside their Australian Air Force counterparts in the use of chemical foam in extinguishing fires in aircraft, and in methods of rescue operations. Training of fire fighters under this plan is expected to continue into the future.—News item.

Shipbuilding Activities

Eleven ships, ranging from a 2,000-ton vessel to a 24,000-ton oil tanker are under construction in the shipyards of Australia's growing shipbuilding industry. According to the Australian News and Information Bureau, no orders for ships have been placed with overseas shipbuilders since 1956, and only six ships are being constructed in foreign shipyards for Australian users.—News item.

Commissions for Pilots

All Australian Royal Air Force pilots and navigators graduating from the Flying Training School at Uranquinty in the future will be commissioned with the rank of pilot officer. Formerly, aircrews trained at the school were graduated as airman pilots and airman navigators with the rank of sergeant. The change is said to be a recognition of the increased responsibility and skills demanded by today's more complex aircraft.—Official release.

Defense Department Moves

Transfer of the head offices and staffs of the Departments of Defense, Army, Navy, and Air, from Melbourne to Canberra will take place in 1959. About 500 members of the four departments will transfer early in the year with a second group of about 600 making the move in July. The transfer of Federal departments from Melbourne to Canberra began 30 years ago. The Postal Department and various other Federal services still maintain headquarters in Melbourne.—Official release.

BRAZIL

Shipbuilding Plans

A Japanese firm is planning on the construction of a shipyard in Rio de Janeiro, giving the Brazilian city its first large shipbuilding industry. Three 4,500-ton vessels are planned for construction next year, expanding to the construction of 10,000-ton ships by 1961, and vessels of 20,000 tons and over by 1962-63. The shipyard, which will handle repairs as well as construction, is to be the first of three such facilities. The other two are to be located at Belém, in the State of Pará, and at Itacurussá near Ilha Grande in the State of Rio de Janeiro.—News item.

Carrier Modernized

The *Minas Gerais*, Brazil's only aircraft carrier, has been modernized at a cost of 13.5 million dollars. The refitting includes an angled deck, mirror landing system, and steam catapult that can launch planes weighing as much as 10 tons. The engines and boilers of the *Minas*



The Minas Gerais

Gerais are arranged in echelon with two propelling machinery spaces, each having two boilers and one set of turbines. The forward engine complex drives the starboard propeller and the rear engine is connected by a shorter shaft to the port propeller.—News item.

Add to Fleet

The Brazilian Navy is to receive four 2,100-ton World War II destroyers from the United States. Other South American

nations that also will receive US warships are Argentina, one destroyer and two submarines; Chile, two submarines and one destroyer; Peru, two destroyers; Colombia, two destroyers; and Ecuador, one destroyer. Delivery of these vessels is planned for the near future.—News item.

KOREA

Sleeping Sickness

The civil health authorities of the Republic of Korea are receiving both technical and material assistance from the Eighth US Army in an attempt to control an epidemic of encephalitis (sleeping sickness). The major part of the United States assistance has been in helping to clean, drain, and spray swamps and other water areas to eliminate the mosquitoes which carry the disease. In addition, blankets and beds have been made available in the Pusan area where the epidemic has hit the hardest. There have been no reports of the disease among United States military personnel, and only a few involving Korean servicemen. A total of 1,815 cases have been reported, of which 333 persons have died.—News item.

FRANCE

Nuclear Power Capacity

France is planning to enlarge her nuclear power program by 250,000 kilowatts and make this additional power available to the European Atomic Energy Community. Seven power reactors are under construction or planned in the member nations of the atomic energy community, and an eighth reactor, at Marcoule, France, has been completed. A total of 25 electrical power reactors are planned, of which nine will be in France, seven in West Germany, four in Italy, three in the Netherlands, and two in Belgium. Seven research reactors are already in operation—five in France, and one each in Germany and Belgium.—News item.

DENMARK

Civil Defense Plan

A recently announced civil defense plan is to cost an estimated \$2,352,000. The plan includes the construction of underground bunkers for government officials and safety facilities for the Danish royal family.—News item.

GREECE

Additions to Navy

Two *Gato* class submarines, the *Jack* and the *Lapon*, have been turned over to the Royal Hellenic Navy by the United States under the Mutual Defense Assistance Program. The two subs are now named the *Amfitriti* and the *Poseidon*. Submarines of this class displace 2,425 tons and have a speed of 21 knots on the surface and 10 knots submerged. They carry crews of 85 men, and are armed with a 3-inch gun, two 20-mm anti-aircraft weapons, and ten 21-inch torpedo tubes.—News item.

GREAT BRITAIN

Maneuverable Submarine

The 35-ton British midget submarine *Sprat*, on loan to the United States for use in harbor defense exercises, was carried across the Atlantic by the US Navy



US Navy Photograph

Midget submarine *Sprat*

transport *Alcor*. The *Sprat* is said to be more maneuverable in tight areas than conventional submarines.—News item.

Military Transports

The *Blackburn B.107*, a development of the *Beverley* (MR, Nov 1956, p 79), is a projected military transport of increased range and payload. The big transport will carry loads of 25 tons for more than 200 miles and a load of 10 tons for more than 4,000 miles, at the same time retaining the *Beverley's* ability to operate from short, rough airstrips. It has a maximum takeoff weight of 75,000 pounds—40,000 pounds greater than that of the *Beverley*. Its four *Tyne* turboprop engines give it a maximum cruising speed of 352 miles an hour.

The *HP-111* is a projected military transport developed from the *Victor* bomber (MR, Sep 1956, p 73). It will be able to conduct long-range strategic operations at a speed of 545 miles an hour, and land and take off from grass airstrips 1,000 yards in length. It will be able to carry a 26.5-ton payload for a distance of almost 4,000 miles, and has a maximum takeoff weight of 120 tons. In operating from 1,000-yard grass airstrips, the *HP-111* will have a takeoff limit of 180,000 pounds.

A dart-shape, ramjet-propelled airliner that could carry 150 passengers from London to New York in two hours is under design study. Power for the airliner would be the same ramjet engine that is currently in use in the British surface-to-air missile *Bloodhound*. The aircraft would use turbojet engines to bring it to supersonic speed so that the ramjets could take over.—News item.

Satellite Launcher

The *Black Knight* missile, successfully tested in Australia (MR, Nov 1958, p 78), is to be adapted for use in satellite launching and in lunar probe shots. The *Black Knight*, a solid propellant missile with a range of 2,000 to 2,500 miles, will have two additional stages added for the satellite-launching program.—News item.

'Blue Streak'

The *Blue Streak* ballistic missile, planned for testing at the Woomera Rocket Range in central Australia (MR, Nov 1958, p 78), will have a thermonuclear warhead and a range of 2,000 to 2,500 miles. It will be launched from underground sites. Full-range firings of the *Blue Streak* are scheduled for 1960, and the Woomera range is being extended for this purpose. The target area for the *Blue Streak* is said to be 30 miles in diameter.—*The Aeroplane*.

Canberra' Trainer

The versatile aircraft *Canberra*, in addition to its previous designs as bomber, night interdicator, photoreconnaissance, and other versions, is now produced in a model specifically modified for the training of pilots and navigators in the use of all-weather radar equipment. The new version, known as the *T. Mk. 11*, has a radar mounted in the nose, and carries a crew of four—two of whom are students.—*News item*.

Combination Engines

Developments in aircraft powerplants include a turboprop engine that can be used in coupled combinations; a double-deck rocket engine; and a three-bore liquid propellant jet.

The *Gnome* 1,000-horsepower turbo-shaft engine is now available in either single or coupled configurations. For the coupled *Gnome*, two engines are connected to a single output shaft, with the facility for operating only one of the powerplants when necessary. As a single turboprop engine, the *Gnome* weighs 525 pounds.

The *Double Spectre D.Spe.D.1*, which has been under test, consists of a fixed-thrust *D.Spe.4* engine, mounted above and attached to a variable thrust *Spectre D.Spe.5*. The two engines are mounted at a slight angle to each other, their thrust

lines intersecting at the center of gravity of the installation. The *Spectre* engines use hydrogen peroxide and kerosene as fuel. The output of a single *Spectre* engine is reported to be about 8,000 pounds of thrust.

The three-bore engine is the *Triple Scorpion N.Sc.T.1* with the three jets arranged two above and one below. The *Scorpion* also has been presented in a double or two-bore combination and used in the British *P.1B* supersonic interceptor aircraft (MR, Jun 1958, p 73). Like the *Spectre*, the *Scorpion* also uses hydrogen peroxide and kerosene liquid propellants.—*News item*.

General-Purpose Helicopter

The *P.531* is a five-seat, general-purpose helicopter powered by a *Turmo* free-turbine engine of 425 horsepower. The



The five-place *P.531* helicopter

free-turbine engine eliminates the need for warmup and will operate on commercial fuels such as kerosene or light diesel fuel. With a payload capacity of 1,708 pounds, the compact *P.531* is expected to be especially effective in such roles as light cargo transportation, a weapons carrier, casualty evacuation, and air-sea rescue. A training version of this aircraft will have full instrument flying facilities. It has a top speed of 120 miles an hour and a maximum endurance of 5.2 hours.—*News item*.

SWEDEN

Naval Reorganization

A plan for reorganization of Swedish naval forces under consideration includes the abolition of all vessels above destroyer tonnage, and a reduction in size of the present destroyer flotillas. The plan calls for a fleet limited to 10 destroyers, 30 S-boats, and about 50 small war vessels. The reduction in fighting strength will be compensated for by the addition of about 100 PT boats.—News item.

Guided Weapon Ordered

The British *Bloodhound* ground-to-air guided weapon system has been selected for use in Sweden's air defense. The number of weapons placed on order by Sweden has not been disclosed. The *Bloodhound* is the basic surface-to-air guided weapon of the British air defenses. The weapon system consists of a target-illuminating radar, control equipment, and launchers for the missiles. When the *Bloodhound* is fired, its four wraparound boosters provide the initial thrust that accelerates the rocket to supersonic speed. During the acceleration, the two *Thor* ramjet engines of the *Bloodhound* start and attain full power, after which the boosters are jettisoned. The ramjet engines bring the missile up to a speed of Mach 2.5, and the semiactive homing system of the *Bloodhound* guides it to the target.—News item.

USSR

Antarctic Assistance

A Soviet aerial reconnaissance team has been promised help by the United States Navy in the survey of the route a Soviet trans-Antarctica tractor train plans to follow in 1959-60. The Soviet aerial reconnaissance team will fly from eastern Antarctica to the US Navy station at MacMurdo Sound where its aircraft will be refueled and serviced.—News item.

EAST GERMANY

Mass Exodus

In the 1945-1957 period more than three million people have moved from the Soviet Zone of Germany to the Federal Republic. According to official figures of the German Federal Republic, 1,984,343 moved between September 1949 and the end of 1957. An additional 931,611 were given residence permits in West Germany between 1949 and 1953. The rest left in the 1945-1949 period. The highest figure of the emigration occurred in 1953 when almost one-third of a million persons crossed the border that divides Communist and free Germany.—News item.

WEST GERMANY

Bridging Techniques

A disappearing bridge demonstrated by United States engineer troops in a West German field test consists of a 60-ton capacity ponton bridge and a system of hoses and valves which permits the bridge to be sunk beneath the surface of the water and raised again at will. In the test, the bridge was raised from the sunken condition and ready for traffic in a 20-minute operation.

The new *M-4* folding bridge is designed to span short gaps without exposing personnel during its installation. The bridge is emplaced by an armored tank recovery vehicle (VTR). In a test the VTR has placed the bridge over a narrow ditch and crossed on the bridge within a time lapse of 40 seconds.

US Army Engineers at Fort Belvoir, Virginia, are conducting structural tests of four full-size experimental, all-welded aluminum truss panels for military tactical bridges. These bridge trusses are expected to support a 60-ton tank load on a 90-foot span. The panels are comparatively light, weighing about 920 pounds for a panel section over 16 feet in length and seven feet, seven inches in height.—News item.

MILITARY DIGESTS

Mum's Boy

Digested by the MILITARY REVIEW from a copyrighted article by Major Reginald Hargreaves in "The Army Quarterly" (Great Britain) April 1958.

Proportion, proportion! One must keep a sense of proportion!

—Ole-Luk-Oie

It is not unusual for an issue of vital public importance to remain undiscussed and unchallenged for a matter of years. This is true even when everyone with a proper concern for national affairs is perfectly well-aware of its existence and of the urgent need to bring it into the open.

Such has been the case with the subject upon which attention was focused with startling abruptness during the course of a lecture at King's College, London. Lieutenant General Sir Brian Horrocks, the speaker, threw a bombshell into the lap of his audience when he roundly affirmed:

It is regrettable but it is a fact that the soldier today is less fitted than those of Wellington's army to stand up to the strain of war. He is brought up on a diet of safety first. His background is such that he is less suitable for training for modern war. . . . He lives under the malign influence of 'Mum,' and, believe me, it is a dangerous influence. For they ruin their boys and spoil them.

Needless to say, this searching comment, by one of the most distinguished corps commanders of World War II, was greeted by an immediate chorus of shrill protest, all the more vehement by reason of the

underlying guilt-consciousness of those responsible for it.

The General had hit a large and particularly dangerous nail squarely on the head, and had drawn attention to a matter of far-reaching public importance, wholesome ventilation of which has long been overdue. Lest it be thought that he was indulging in wanton exaggeration, the following instances of "Mum's" pernicious influence—reported in the press—are given as representative of many others of a similar nature.

One youth, pleading guilty to being a deserter, urged in extenuation, "If I could be posted near home, I wouldn't do it. I don't like being away from home."

A young gunner of a parachute regiment, who was court-martialed for refusing to draw a parachute when ordered, gave the excuse that his mother had forbidden him to make a jump.

Similar examples from the United States, reflecting the overpowering but scarcely constructive influence exerted by mothers over their offspring, could be quoted *in extenso*.

The Matriarchy

The United States, of course, is a gerontomatriarchy in everything but name.

The shortage of women in the early pioneering days gave them a "rarity value" they were not slow to exploit; and they have "crashed in" on the strength of the legend ever since. In these days, their widespread economic independence, their network of pressure group organizations, their powerful lobbies in the central and state legislatures, and the control they exercise over the expenditure of 80 percent of the money circulating in the country, endows them with a dominating position that is well-nigh unassailable.

In England, even if women have not yet learned to queen it to quite the same extent, the writing is on the wall. Add to this the fetishism which has successfully sublimated the entire idea of "mother," and which is sedulously pandered to in the saccharic British Broadcasting Corporation program "Hulloa, Mum," and it will be seen how the psychotic umbilical cord linking the youth in uniform with the female author of his sublunary existence has been deliberately strengthened.

The harm wrought by this kind of neurotic sentimentalism came under sharp reproof by the Wolfenden Committee appointed to inquire into conditions in the fighting services. Writing of the disproportionate importance given to home ties in the present-day recruit's system of training the committee reported:

After the first few weeks, leave is frequent. When the five-day week is accepted in industry this is regarded as a necessary concession to the civilian-soldier. The committee doubts the wisdom of this, regarding it as unsettling. It encourages the serviceman to live a 'double life' putting up with his weekly duties in expectation of the civilian environment at the weekend. It might well be that he would be happier if he took his period of service as a whole-time commitment and stuck to soldiering without these repeated unsettlements while it lasted.

The above applies more particularly, of

course, to the National Serviceman, who, we are informed, is gradually to be eliminated from the military scene. But if the current figures for recruits entering on a regular engagement are anything to go by, it would be as well to legislate for a prolongation of the National Service system far beyond the date of expiry at present contemplated. It follows that, for good or ill, "Mum's" influence is something the fighting forces will have to take into their reckoning for many days to come.

The Old Soldier

One of the many virtues of the oldtime long-service soldier was his faculty for regarding his regiment as his home. In all essentials, his interests were bounded by the immediate military environment in which he willingly spent most of his days. "Civvy Street" belonged to another and largely alien world; good enough to visit briefly now and then, but entirely lacking in the sense of "mateyness," warmth, and mental ease that are bred only by a familiar background. His own world was definitely masculine, and its very atmosphere helped to condition him resolutely and reliably to carry out the responsibilities he had assumed. According to the late Field Marshal Lord Wavell:

The difference between the old type of soldier and the modern type is that the old soldier was tough while the modern type usually has to be toughened.

It is a necessary process that is hardly facilitated by constant recourse to an antimilitaristic home atmosphere and the cloying, enervating influence of "Mum."

Naturally enough, every mother is convinced that in her son the world has been presented with something bordering closely on the miraculous. Without the aid of some such "compensatory delusion," as Freud would doubtless term it, she would never be able to support all the tedious exactions and squalid demands that helpless infancy makes upon her. The gravamen of the complaint is that she continues

to regard all her geese as swans, for whom especial exception to the rule can be claimed as a right. And since all mothers think along similar lines—I didn't raise my boy to be a soldier, with the emphasis on the possessive pronoun—if they were to have their collective way, there would be no rules, only exceptions. The outcome of this impenetrable power of self-delusion and the anaconda like embrace in which she enfolds her boy is that he enters the service psychologically preconditioned sullenly to resent his severance from the emasculating home influence; to which his petulant insubordination and deplorable lack of moral fiber unquestionably can be attributed.

Admittedly, once he proceeds overseas and is brought face to face with reality in such places as Cyprus or Malaya, for the most part he speedily pulls himself together and comports himself in a manner in no way unworthy of the military traditions he has inherited. But the task of training and mentally conditioning him to perform his duty has been woefully hampered and rendered more difficult by the inimical influences which have to be overcome before he can take the field as anything other than a liability to his comrades and a menace to the enterprise on which he is engaged. Even with active operations in progress the self-centered maternal impulse will not hesitate to seek favored treatment for one particular lad—and let the others go hang.

General Mark Clark has recorded that when in command in Italy, and desperately short of men, he received a letter from one only-too-typical mother threatening to sue him for having transferred her boy from the relative security of an antiaircraft battalion to perilous duties with an infantry-assault company.

Indeed, there is no limit to which this selfish sense of maternalism is not prepared to go; and it is no exaggeration to affirm that the sorry state in which the

world finds itself today can largely be attributed to it.

World War II

The end of hostilities in 1945 found General Eisenhower in possession of a combined Anglo-American Army which constituted perhaps the most powerful fighting force the world has ever seen. Had it remained in being and ready for action, if only for a year or 18 months, the unchecked expansion in which Communist Russia has so freely indulged would never have been allowed to get into its stride.

But the cry went up to "Bring the boys home"; a demand the Communists were quick to fan into flame by every conceivable trick known to men skilled in all the arts of subversion and propaganda. Egged on by the agents subtly at work both in Britain and America, the women in either country resorted to all available means to bring about a premature demobilization of the only armed force that could have held imperialist-communism's vaulting ambition in check. Demonstrations, interminable processions of "marching mothers," the incessant lobbying of members of the Legislature, and the floods of letters to their sons in the forces ended in the troops themselves joining in the outcry for a speedier return home of the overseas armies. As the American writer Karl Baarslag has recorded:

United States troops by the thousands rioted and demonstrated from Manila to Frankfurt, demanding a speedup of demobilization procedures. Some of these 'we want to go home' demonstrations were reported as orderly and apparently spontaneous. . . . However, others—notably in Paris, Shanghai, and Manila—definitely showed the fine hand of trained Communist agitators.

And the mothers of England and the United States, in their short-sighted eagerness to "get the boys home," were among the most ductile dupes of the men whose

one idea was, and remains, to hasten the disintegration of the West and all it stands for—including the institution of "Mum's" kingdom, the home.

Instead of immediately organizing counterpropaganda and indoctrination, emphasizing the folly of leaving the field clear for Communist expansion, the authorities, on both sides of the Atlantic, feebly yielded to the popular clamor, and Johnny came marching home again *ec dum*.

Some day, perchance, it may occur to "Mum" that she reclaimed her darling boy at the price of imperiling the future, and perhaps the life, of the grandson who has come to mean as much to her as the child of her own loins.

The Supreme Weapon

There is one extremely hard and unpalatable fact that the people of the West have to face up to and accept—that their survival depends upon their readiness to fight two kinds of war, the atomic war and the conventional war that would be its inevitable aftermath, and might prove a substitute for it.

This demand involves the maintenance of very considerable conventional forces in addition to those specialist troops trained in the use of atom and hydrogen weapons.

At the present time it can be taken as axiomatic that no democracy, in times of so-called peace, can afford to maintain fighting forces of a strength in any way adequate to the call that would be made on the country's armed might by anything like a major war. To support such a force would impose so oppressive a burden of taxation on the populace that the nationwide standard of living would fall to the bare subsistence level. And what would "Mum" have to say then?

It is only under a ruthless dictatorship that the well-being of the community is sacrificed so that the country's armed forces can be maintained at something closely approximating war strength.

"Mum" may not have assimilated the fact, but statistics worked out by American research workers show that the present rates of real wages for the average Russian worker are no more than three-quarters of what they were in 1927-28. And even at that period they were considerably lower than those prevailing in 1913, when the Muscovite toiler in the field and factory was just beginning to win something like a fair reward for his labor.

In effect, under the repressive regime imposed upon its dupes by the men in the Kremlin, the average Russian family is compelled to endure a drab, undernourished, joyless existence, year in and year out, entirely devoid of those small, everyday amenities that make life worth living, and which "Mum," no less than anyone else, has learned to take for granted. But it is because they passively accept so poverty-stricken a way of life that the Red dictators can boast of their ability to put up to 400 infantry divisions in the field within 30 days of mobilization.

Now it is certain that "Mum" would have a lot to say—and rightly—were the suggestion ever put forward that the United States and Britain should emulate the Russians and, by lowering their respective standards of living, maintain fighting forces running into millions. Apart from the fact that one of democracy's aims is to encourage an ever-expanding standard of living, the combined populations of the two Western Nations total less than 350 million, as against the 750 million represented by Russia and the satellites she holds in thrall. So even were Western living standards so lowered as to permit every fit man up to the age of 40 to be siphoned off into one or the other of the fighting services, or their supporting heavy industries, the West could never compete with Russia in the matter of sheer manpower.

The one advantage enjoyed by the Western Powers lies in their possession of in-

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finitely superior material and technological resources. But you cannot rely on pushbutton weapons alone. Should it come to open warfare, the supreme weapon will still be Man.

No Exceptions

What has yet to be brought home to the women on both sides of the Atlantic is that in the matter of manpower relatively small but highly trained standing forces must be supplemented and supported by an ample and steadily maintained body of reserves; men who have been through regular army training—and may have seen active service in such hot “cold” wars as Korea and Malaya—and who remain available for duty in time of emergency. And that means “Mum’s” boy—all of them, everywhere.

Presumably “Mum” prefers the untrammelled Western way of life, with its rising standard of comfort and endless opportunity, to the dreary subexistence offered her by communism. Almost certainly she will agree that the mode of living in which she and her boy have been reared, and to which they have grown accustomed, is something very well worth having. But like most things that are worth having, it has to be paid for—not all in cash, as represented by taxation, but in a certain measure of self-abnegation.

Current estimates allocate a little something for the nuclear deterrent and a little something for the kind of imperial police operation that is liable to crop up at any moment. But they make no allowance for the full-scale nuclear and/or conventional conflict which constitutes an eventuality that is nothing less than sheer lambent lunacy to pretend to ignore.

It is when the government recovers from its present tendency to starve the fighting forces the better to bolster up the squandermania begotten of “welfare” and the prodigally wasteful “nationalized” services that it may be brought to realize that there can be no such thing as *social*

security until you have first made sure of *national* security.

It may then be appreciated that to support a cadre of officers, noncommissioned officers, and men serving in regular forces, an annual intake in Britain of 110,000 and of 850,000 in the United States is still required for the upkeep of the ground combat forces alone. That is the absolute minimum the military authorities can make do with if “Mum’s” way of life is to be safeguarded and the future of “Mum’s” boy is to be reasonably assured. It is part of the insurance policy to which both free nations are called upon to subscribe. If the politicians refrain from telling her this, it is because, for a decade and more, they have encouraged her to eschew the contemplation of uncomfortable truths, and fear confronting her with them now lest she exercise her vote to cast them out of office.

But the hard, immutable fact remains that unless “Mum”—all the way from John o’ Groats to Land’s End, from Maine to the Deep South—is prepared to pay her premium in the form of her son’s service in one or other of the fighting forces, then the insurance policy will lapse by default, with potential consequences too catastrophic to contemplate.

“But why *my* boy?” “Mum” will demand. “Surely there are plenty of others without him?”

Actually, there are not. In Britain, recovery from the heavy toll of World War I was never made good, while for years female births have consistently outnumbered male. In the United States, as an outcome of the “depression” years, there has been a very serious decline in male population, which is only now being overtaken. The result—plus the attraction of the easy money to be obtained in civilian life—has been a dangerous shortfall in the intake of recruits. It follows that there can be no discrimination, no preferential treatment for “Mum’s” boy, since the eyes

of precaution are bound to regard him as a potential draftee like any other.

The Past

Time was when women saw their obligation with regard to the encouragement of service on the part of their men in considerably truer perspective.

When the youthful George Napier received his commission in a Dragoon regiment stationed in turbulent, danger-ridden Ireland, his mother, the famous Lady Sarah, openly wept with pride when she placed the helmet, with its grim motto of "Death or Glory," on her son's head.

When William Hodson was given his cadetship in the Bengal Infantry and went to take farewell of his family at Torquay before sailing to India, although his mother was in failing health she uttered no reproaches or regrets, only words of commendation and brave hopes for her boy's future.

During the War Between the States, strong-hearted Julia Ward Howe, scanning the serried ranks of her countrymen as they marched forth in battle array, could "read a fiery gospel in the burnished rows of steel."

When Colonel Robert Gould Shaw led his 54th Massachusetts Infantry in review on Boston Common, his mother, gazing rapturously on the glittering scene, exclaimed, "What have I done, that God has been so good to me?"

Even so recently as 1914 the mother might shed a silent tear, but she would still join in the chorus of *we don't want to lose you, but we think you ought to go*.

We have sunk far into the morass of narrow, self-centered *leggerezza* since that simple little song brought a roar of applause from all parts of the theater, and from men and women alike.

Mum's Responsibility

Falstaff rhetorically demanded:

Will you tell me, Master Shallow, how to choose a man? Care I for the limb, the

thews, stature, bulk, the big assemblage of a man? Give me the spirit.

It is the spirit of so many present-day recruits that leaves so very much to be desired, infected as it is by the pettish defeatism and sullen resentment bred in the home atmosphere. Yet it is the quality of the spirit—the morale—of the individual soldier that ensures victory or invites defeat; and often, where the man himself is concerned, makes all the difference between survival and extinction. In war, there are only two kinds of soldier—the quick and the dead. That is, the alert, fully trained battle-technician, and the slug-gard who has failed so lamentably to profit by instruction that he is far more dangerous to his comrades and himself than he is to the enemy.

Battle-worthiness is the outcome of an intelligent, whole-hearted response to good training. But the finest training in the world cannot make a proper job of a recruit who has been conditioned by his home atmosphere to a fretful resentment of the entire process of instruction. He starts off on the wrong foot and is apt to remain spiritually out of step for the complete period of his service. The contagion of "Mum's" refusal to recognize the need for their separation has turned him into a dreary caricature of his own possibilities.

"Mum" would be the first to insist—and rightly—that her Johnny should not be given anything but the very best in food, clothing, amenities, and—if she gave them a thought—the tools of his trade. Only the finest obtainable is good enough for her boy. But if Johnny has set about the attempted mastery of his weapons in a sustained mood of peevish disinterest, their quality will make little or no difference if and when the time comes for him to go into action. The most superlative weapon in the world is no more than an encumbrance if the man who seeks to wield it is not thoroughly accomplished in its use.

It would be the last word in tragic irony were Johnny to become a casualty—or worse—because “Mum’s” enervating influence had encouraged him to slack on his training and so enter the field unsure of himself. Fresh to the ordeal, his chances of survival would be dangerously minimized by the very unhandiness in arms to which he had been psychologically preconditioned. In that event, in bewailing her melancholy fate, to what degree would “Mum” appreciate her own measure of responsibility for bringing it about?

The Peril

The history of America is the story of her ever-expanding frontiers, and of the men and women of dauntless courage who carved a home for themselves out of the wilderness. It was a home where “a gun hung over every hearth, with not a man, woman, or boy unpracticed in its use.” When the Conestoga wagons halted to beat off the attack of the swarming redskins, women and mere lads unhesitatingly took their places in the firing line by the side of their men. All of them were resolutely determined to defend their own—their lives, their liberty, and the manner of living it seemed good to them to follow.

At all times they confronted peril and privation; but, at whatever temporary sacrifice, they triumphantly won through, in good heart, and with their eyes fixed confidently on the future. In just such a mood of indomitable resolution their Elizabethan forebears had faced up to the menace of invasion, as the Spanish Armada swept into the English Channel in that momentous year of 1588.

Today, the peril, if apparently more remote, is infinitely more powerful, huge, and menacing; and it is only when “Mum” and the boy she is inclined to mollycoddle and get spiritually off-base have been revitalized by some of that courageous spirit of old that the threat can be defied successfully.

If “Mum’s” boy is all she thinks he is—and fundamentally he is sound enough—were she in obvious danger his first instinct would be to spring forward for her protection. It is that selfsame laudable impulse, given skill and additional strength by sound training and broadened out by the indoctrination which enables its disciple to identify himself with the community as well as the individual—it is that heightened impulse which makes the good soldier.

The Doctrine

War is no longer the sport of princes, the last argument of kings. It has become the active expression of the irreconcilable ideologies of peoples. Even so, the Western democracies wage no wars of aggression, no conflicts designed to impose their own particular political philosophies on other nations. When they do square their shoulders for a fight it is to suppress a rampant tyranny in the hope of ensuring a better and more stable condition of peace than has hitherto prevailed. Their fighting men are neither thugs nor bullies; and they are no more likely to provoke a war than a policeman is to incite a riot, or a fireman to start a conflagration he would immediately be called upon—at considerable risk—to put out. The soldier is not the enemy of peace but its watchful guardian. Uplifted by this spirit of dedication and responsibility, he is “not on the roll of common men,” but belongs to the proud company of the elect.

That is the doctrine preached, and rightly preached, by those to whom the military training of “Mum’s” boy is entrusted. They are not fools, these chosen few; they have brains as well as braid. They know that the men dignified with the defense of their homeland and the ideals of liberty it represents, like Cromwell’s “Ironsides,” must “make some conscience of what they do,” must “know what they fight for, and love what they know.” That is the creed they preach throughout the period of mil-

itary service that "Mum's" boy is called upon to undergo.

But there must be reciprocity; there must be a clear realization on the part of those under instruction that it takes more than a uniform and an infinite capacity for "sounding off" to make a soldier worthy of the name. Above all there must be no enervating, defeatist influence emanating from that other center of spiritual authority—the home. It is the mood in which the draftee leaves his parental roof that matters; and far too often home is responsible for more leeway than the authorities are given time to make good. As he has recorded, when a typical "Mum" wrote to General Mark Clark to tell him that her boy had joined the Army, and—somewhat unusually—to beg him to develop Johnny's character and make a man of

him, the General could only reply that he would do his best, but that he would have the lad for no more than 18 months, whereas his mother had had him for 18 years—the 18 most formative years of his life.

The soldier's invisible but most powerful weapons are courage, fidelity, selflessness, self-control, fortitude, and, above all, a deep and abiding sense of consecration to a lofty and worthwhile cause. If "Mum's" boy should be found wanting in these sterling qualities and proves incapable, under instruction, of their steady cultivation, then the blame must very largely rest with "Mum."

In her own ultimate interests why set out to undermine the strength which alone may spare her the catastrophe of war she so greatly dreads.

The Cult of the Bayonet

Digested by the MILITARY REVIEW from an article by Major J. Nazareth in "The Infantry Journal" (India) Nr. 2, 1957.

THROUGHOUT the history of warfare, sound tactics have been formulated after a correct evaluation of the conflicting claims of shock action and firepower. Very often this evaluation has been clouded by sentimental considerations and faulty tactics, and consequently disaster has resulted. Because bravery is a necessary quality in a soldier, and also glamorous, throughout history soldiers always have been reluctant to accept the fact that victory in battle usually goes to the cleverest and not necessarily to the bravest. Not all the bravery of Goliath availed him against David's pebble, nor the bravery of Achilles against the arrow of Paris.

Shock action is the usual recourse of the brave man—the use of the missile, that of the clever man. Sound tactics are evolved when the weapons of shock action

are weighed against missiles and the appropriate use of both in battle is decided, not on the issue of what tactic is more fitting for the brave man to adopt. When national survival is involved one would think that the best means for victory in battle would be employed, but such is the force of tradition and sentiment that soldiers often have preferred to die "gloriously" rather than to live by outwitting the enemy.

The Spartans worshipped valor and, basing their tactics on creating opportunities for the display of bravery, fought in battle in the famous Spartan phalanx using shock action to come to grips with the enemy. Tyrtaeus sighs, "Glorious indeed is death in the front rank of the combat when the brave man falls fighting for his country." They spurned the use of missiles by which a brave man could

be killed by a coward. They neglected the cavalry because it did not provide as many opportunities for the display of valor as did the phalanx. These deficiencies were the cause of the downfall of Sparta.

In the Middle Ages the chivalry of France also was ridden by this fetish of wanting to display bravery by shock action in battle. When they encountered the English longbow, which was able to penetrate their armor, their blind addiction to shock action influenced them to don heavier armor rather than recast their tactics. Under the increased weight their cavalry charges could be carried out only at an ambling trot. They accepted the encumbrance of being so steel-encased that they could only mount their chargers with the help of attendants and when unhorsed floundered as helplessly as tortoises on their backs.

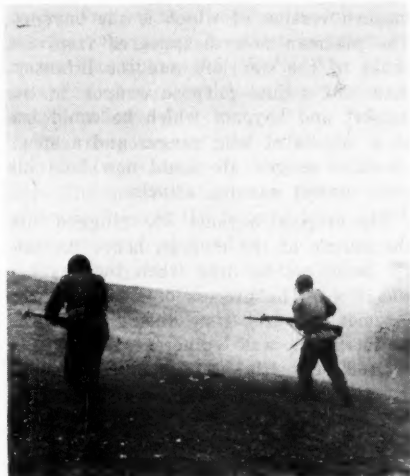
At the Battle of Crecy (1346) the English longbowmen practically annihilated these lumbering warriors. Yet 10 years later at Poitiers the French repeated their folly of Crecy, an example of preferring to die foolishly yet gloriously rather than survive intelligently.

The Bayonet

Since 1647 the bayonet has been the infantryman's weapon of shock, and a bayonet cult has developed. Therefore, we still find this outmoded weapon issued to the modern soldier. The immediate ancestor of the bayonet was the pike which was the shock weapon supplementing the musket, the first firearm. The musket was very primitive and took a long time to reload: it had poor accuracy and a very limited range. Because of this the musketeers had to fight from a firm base formed of pikemen who protected them during reloading. Initially, the proportion of musketeers to pikemen had to be small, but as firearms developed this proportion increased progressively. Under Francis I in France the proportion of firearms to pikes was one to three or four.

At the time of the wars of religion, harquebusiers—the improved musketeers—and pikemen were equal in number. Under Louis XIII in 1643 there were two firearms to one pike; in the war of 1688 four to one, and finally pikes disappeared.

The bayonet originally was developed to fill the role of the pike. With the development of the modern rifle capable of a high rate of extremely accurate fire



Assault training with the bayonet, a weapon that is outmoded in modern war

and hence able to form its own firm base, the bayonet should have disappeared unless its retention could be justified for other reasons. These have not appeared.

Because the early muskets were extremely inaccurate, the infantry had to meet a cavalry charge by reverting to the phalanx formation—that is, massing pikemen close together and fighting shoulder to shoulder. As firearms became more accurate, the infantryman began to rely more on himself and the close order formation was replaced by the skirmishing line. When this happened, *pikes and bayonets* lost their importance.

It obviously was desirable that the infantry soldier should be able to fire his musket and withstand an enemy cavalry attack, especially because the combination of pikemen and musketeers made tactics complicated. In 1647 Puysegur from Bayonne, France, tried to solve this problem by fitting onto the muzzle of the musket a short dagger in common use in Bayonne. Because of their origin, these daggers were called "bayonettes," the modern version of which is the bayonet. The pikeman now disappeared from the ranks of the warriors and the infantryman had a dual purpose weapon in the musket and bayonet which he could use as a missile at long ranges and a spear at short ranges. He could now hold his own against cavalry attacks.

The original bayonet was plugged into the muzzle of the musket, hence the latter could not be fired when the bayonet was fixed. The process of fitting on the bayonet also took time during which the infantryman was vulnerable to attack. In 1689 the Highlanders under Dundee defeated the English under MacKay at the Battle of Killiecrankie by charging home while the English were fitting on their bayonets. The defeated general thereupon took the lesson to heart and devised a bayonet with a ring that could be clipped onto the outside of the muzzle so that the musket could be fired with the bayonet on. In 1805 Sir John Moore, famous for his training of light infantry at Shorncliffe, introduced the spring clip for securing the bayonet, which is in use today.

The Cult

Once the bayonet was introduced, there arose a cult of the bayonet with its votaries who believed in shock action as opposed to firepower. Frederick the Great was one of these initially, but he soon realized that artillery fire was the deciding factor in war.

Napoleon said, "Missile weapons have

now become the principal ones and it is by fire and not by shock that battles are decided today."

Jomini, who witnessed many Napoleonic battles, said that except in villages and defiles he had never seen two forces cross bayonets.

Clausewitz was unwittingly the greatest apostle of the cult of the bayonet because his writings were misinterpreted. He said, "Let us not hear of generals who conquer without bloodshed The close combat, man to man, is plainly to be regarded as the real basis of combat." As a result, 100 years after Waterloo the military manuals continued to emphasize the importance of shock action.

In the Crimean War of 1854-56 both the opponents were bayonet devotees and, therefore, neither side exploited the capabilities of their weapons. The English and French did not use their *Minie* rifles to effect, nor the Russians their muskets. Both sought to come to grips; consequently, the tactics employed were as primitive as if the rifles were used as cudgels. Real bayonet charges occurred during this war, for example at Inkerman, the Soldiers' Battle, where leadership was bankrupt. But what is notable is that in spite of this, casualties with bayonet wounds were very rare.

In addition to Clausewitz, French tactical thinking was influenced by de Saxe and Bugeaud who advocated close-quarter fighting. In the Franco-Italian War of 1859 the Austrian *Lorenz* rifle was superior to the French *Minie*. The French tactical doctrine was to depend on the bayonet. Aided by the covering fire of their superior rifled artillery guns and their better tactics, they closed with the enemy and won the Battle of Solferino. Both sides deduced from this battle the wrong lesson—that it was shock action that was responsible for this victory. Both were oblivious to the effect of the firepower

of artillery. Thus the bayonet secured additional adherents.

In the Seven Weeks' War of 1866 between Germany and Austria, the breech loaded Prussian needle gun met the Austrian muzzle loaded *Lorenz* rifle. Because it was breech loaded the Prussian needle gun could be loaded from the prone position. Having attributed the French victory over them at Solferino to shock action, the Austrians decided to adopt similar tactics and rely on the bayonet. This suited the Prussians who had a superior rate of fire and the Austrians were again defeated.

In the American Civil War the rifle was the dominant weapon. Both sides found no use for the bayonet and discarded it, and finally in the Franco-Prussian War of 1870-71 close order fighting completely disappeared. It became obvious that skirmishing was the only tactic that would survive.

Since the progress of movement on the battlefield had not kept pace with the developments in firepower the initiative passed to the defense. The cavalry charge and the bayonet assault had lost their meaning. In 1890-91 the magazine rifle and the bullet propelled by smokeless powder were invented which further increased firepower. Now the rifle could do all that the bayonet could do both in attack and defense, and what is more do it more effectively.

Did the bayonet disappear? By now it had become a totem of infantry. In the South African War of 1899-1902, General Buller issued the following order.

Men must get to close quarters with the enemy; that is the way to victory and safety. Any retirement is fatal. The only thing that the enemy cannot withstand is a hand to hand fight with us.

With the elusive Boers, this had the same effect as telling a *shikari* to catch a partridge by putting salt on its tail.

Persistence of the Cult

According to Tom Wintringham in *Weapons and Tactics*, in the Russo-Japanese War of 1904 two and a half percent of the total casualties on both sides were caused by spears, swords, and bayonets. In the Great War of 1914-18 bayonet wounds were so rare that no full statistical record of them was kept. They are included in the British figures among the 1.02 percent of miscellaneous and accidents. And yet this war was mainly siege warfare featuring frequent bayonet attacks. The figures for World War II, if compiled at all, would not be worthy of consideration.

The firepower of the rifle has been increased further by making it self-loading. The question that now forces itself on us is, why is the bayonet still considered a weapon of war?

Our analysis so far shows that in the evolution of tactics it is tradition and sentiment and not experience that plays the leading part. "Cold steel" and "close with the enemy" are *abracadabras* to the soldier, especially in peacetime training. We wonder at the folly of the French knights at Crecy and Poitiers—will later generations similarly wonder at our use of the bayonet?

In his analysis of weapons, General Fuller in his *Armament and History* has classified the powers and limitations of weapons under the following headings:

1. Range of action.
2. Striking power.
3. Accuracy of aim.
4. Volume of fire.
5. Portability.

The rifle and bayonet are both close-quarter weapons. The bayonet has no other role to justify its existence unless perhaps to open the butt trap of a rifle or as a tin opener.

Let us, therefore, examine these two weapons in the light of General Fuller's

analysis. In range the rifle is superior with the added advantage that its strike is not liable to a parry. In striking power the bullet is superior as its penetration is not affected by clothing and equipment which impede the bayonet thrust. In accuracy of aim the bullet has a larger target out of reach of the bayonet and its aim is little affected at close range by the actions of the defender, which is not the case with the bayonet. In volume of fire the rifle obviously is superior. Whereas the bayonet can only make one thrust, the rifle can fire repeatedly, especially the self-loading rifle. In portability the rifle obviously is more portable by itself than with the bayonet.

Against these self-evident facts the retention of the bayonet has been justified by reasons that are both vague and ill-considered. It has been suggested that the bayonet has a role in silent attacks by night. If special raids are envisaged, there is no reason for arming the infantry with a weapon that has such a limited use. Besides, how the enemy is to be approached at close quarters to permit the use of the bayonet, and how his dying yells when bayoneted are to be controlled in the interests of surprise, are interesting problems.

Lastly, it is argued in an "airy fairy"

manner that the bayonet is a great weapon of moral force—that no enemy can stand up to a determined bayonet attack, presumably because the approach of cold steel tends to unnerve him. This is true, not because of the bayonet as a weapon, but because the bayonet assault symbolizes the determination of the attack.

Ardant du Picq was the greatest exponent of the moral force in battle. He was a pioneer of the study of this aspect of warfare whose views on the subject are the result of a painstaking study. In his book, *Battle Studies*, he says:

The shock is a mere term. The de Saxe, the Bugeaud theory, 'Close with the bayonet and with fire action at close quarters. That is what kills people and the victor is one who kills the most,' is not founded on fact. No enemy awaits you if you are determined, and never, never, never are two equal determinations opposed to each other. Each nation in Europe says, 'No one stands his ground before a bayonet charge made by us.' All are right. All are persuaded that their attacks are irresistible; that an advance will frighten the enemy into flight, whether the bayonet be fixed or in the scabbard makes no difference.

Rivers as Obstacles in Containment Combat

Translated and digested by the MILITARY REVIEW from a copyrighted article by Colonel Cathala in "Revue Militaire Générale" (France) January 1958.

A RIVER usually is considered an important natural obstacle, as are mountains and woods. However, its value as an obstacle has been changing steadily and its importance within the framework of a position defense often has been debated. Today, although the thinking on defense positions is deeply influenced by nuclear weapons, the old controversy about the use

of rivers as obstacles in containment combat undoubtedly is going to be resumed sharply.

With its constructed works such as bridges—usually limited in number and span—a river is a terrain feature by which the movement of the bulk of forces might be slowed down and the movement of heavy means restricted. Destruction of

its constructed works instantly gives a river the quality of a continuous obstacle. In order to shift his combat power to the opposite bank, the assailant must reestablish crossing means of great traffic capacity—he must build bridges. In order to protect the sites of engineer construction work during the time necessary for the emplacement of bridging equipment, a certain portion of the forces must cross the river in advance. The crossing of heavy equipment which requires technical means and the easy crossing of men cannot be easily coordinated. Most of the time a scattering of the means occurs.

Advantages

A river as an obstacle gives the defender two advantages:

1. Favorable opportunities to intervene locally against an enemy whose means, scattered during a crossing operation, are temporarily more vulnerable.
2. Time to assemble forces and to intervene at full strength before the enemy's bridging has permitted him to reestablish his offensive power on the opposite bank.

However, these advantages cannot be effective unless the defender knows how, and is able to take the necessary measures, to observe the obstacle and to thwart any attempt to cross it without delay. Finally, the defense maneuver must be based on an active obstacle and not solely on a passive obstacle.

Passive Obstacles

This classical distinction between passive and active obstacles leads to the fact that throughout history there have been two great periods in the evolution of rivers as obstacles.

Up to the 20th century the relatively small strength of field armies did not permit a permanent surveillance of the entire riverline. The assailant tried to cross by surprise. In his *Military Directives to Generals*, Frederick the Great wrote:

Strength is needless when the enemy is on the opposite side of a river which you have decided to cross. One must reckon in deception. If a large river has to be crossed the only thing to do is to imitate the crossing of the Rhine River by Caesar or the crossing of the Po River by Charles of Lorraine.

For the defender the best course of action was, first of all, to foil the deceptive measures of an enemy attempting to cross the river, and to discover the first crossing movements as soon as possible. But the inadequate strength of forces at his disposal permitted only a mobile surveillance with all the risks of delay in intelligence. Consequently, it was necessary also to remain capable of intervention in strength against an enemy already having made progress in a crossing operation.

In 1813 Napoleon wrote to Prince Eugene, who was then stationed along the Elbe River:

Nothing is more dangerous than to defend seriously a riverline by disposing troops all along the bank. Indeed, when the enemy threads his way by surprise—and he always makes his way—he finds an army on an overstretched defense line and he prevents it from assembling. . . .

If one wants to stick to a defensive posture, there is no other course of action than a disposition of troops such as to be able to concentrate and to strike the enemy before the completion of his crossing operation.

Up to the 20th century victory depended on the success of either the assailant or the defender in the race to assemble forces. In this race the advantage for the defender increased since the crossing time was longer and the defender's ability to discover the crossing and to intervene in time was increased.

However, river crossing and bridging techniques were improved progressively and operations speeded up; increasing the

chances for success by the assailant. The defensive value of a river considered as a passive obstacle was fading, and finally Napoleon could say: "A river has never been considered to be an obstacle which should delay an advance more than a few days."

The Active Obstacle

During the 20th century, opposing armies are characterized principally by the importance of their total strength, the

tainment operations. It then outlines much of the defense positions.

It should be noted that great rivers gave their name to most battles of the last two World Wars. Generally speaking, however, if these battles were favorable to the defense in World War I, they turned to the advantage of the assailant in World War II. Indeed, crossing operations were conducted in World War II at an ever-increasing pace. The setting and the op-



Fixed bridges in rear areas are especially vulnerable to nuclear interdiction

firepower of collective weapons and, more recently, by the mobility of tanks and airplanes.

As a consequence the defender has the capability of observing a riverline continuously and permanently with the help of aerial reconnaissance and intelligence. He also has the capability of opening fire on enemy troops during the crossing. Hence a river becomes an active obstacle, and, in addition, it offers more guarantees against a surprise attack by armor. It again becomes an essential asset in con-

eration of heavy bridges—which is the final and technical phase—frequently did not occur until 24 to 36 hours after the assault started. Then a river—although an active obstacle—once more had a decreasing value in containment combat.

Today, while the trend is toward defense in depth, one might more and more wonder whether important natural obstacles are limited only to mountain or wooded masses. The value of a river, which after all is a linear obstacle, as a terrain feature is more and more denied.

Might we not find in a wrong evaluation of the defensive value of rivers the main reason for so many setbacks in the defense of a riverline?

In battle a river can play different roles depending upon its location in relation to the area of contact:

1. If located in remote rear areas, a river is a vulnerable line where movements of large units, heavy equipment, and supplies may be harassed by enemy aviation.

2. If located in close rear areas, a river facilitates canalizing operations, thus hindering the commitment of enemy reserves or the withdrawal of committed enemy means.

3. If located on the line of contact, a river can constitute a continuous obstacle which cannot be enveloped or bypassed. Therefore, it must be submitted to a frontal attack. In this case, a river is an obstacle which slows down the advance of an assailant, dissociates his means and hampers its combat operation, compresses the flow of traffic, and slows down the maneuver. Therefore, a river provides the defense with timesaving and more opportunity for reaction.

In Western Europe where the waterway net is dense, there will always be a large river located in remote rear areas. Therefore, there is no problem about opportunities for aerial interdiction. It is doubtful, however, that the area earmarked for containment combat—that is, an area of limited depth—will offer two riverlines making easier both operations on the line of contact and in the enemy close rear areas. Therefore, the defender has to make a choice for the combination of the river as an obstacle with the defensive position. Rejecting the obvious advantages of a riverline in his own rear area he may decide either to leave the riverline in the enemy zone or to establish the friendly defense position behind it and under its protection. The last solution

seems to have prevailed almost systematically. But, doing so, is it not possible that the defender was often cherishing an illusion?

Illusions

It must be recognized that any terrain feature, usually overemphasized on a map, is always somewhat attractive. It is an objective easy to designate. It gives hope for a solid system and economy of forces, provided it looks like a potential obstacle. There are numerous examples of positions selected along an insignificant riverline. Illusions fade away very quickly in the field.

Often such a line that has been selected on a map turns out to be meandering, wooded, narrow, difficult to observe, and unsuitable for a good fire plan. Important forces appear to be necessary where the defender was expecting economy. The defender cannot afford this, for the obstacle cannot be made active. *A small riverline has no effective value.*

If a river is somewhat larger, the defender may be led into temptation by exaggerated and perhaps thoughtless confidence. Accordingly, he may decide to base all defensive organization upon it. If he does so, he will have to deploy his forces on a thin line, following the bends of the river. The greatest part of his means will be committed along the river—the over-all disposition of his troops will be such that it will be unbalanced. If too much emphasis is placed on the forward area, not enough forces will be left for maneuver in depth. Such an organization which sticks to the obstacle is extremely vulnerable.

A river of medium size should not be the keystone of the defense; rather than to base a position defense upon it, it seems to be more effective to capitalize on it by including it in the close rear area so as to canalize the enemy penetrations.

Large Rivers

The close association of a river and a position reasonably can be considered only if:

1. Its course and width assist in the surveillance against infiltration.
2. The characteristics of the river—width, speed of current, depth, nature of the banks—compel the enemy to use a wide and varied scale of technical means.
3. Scarcity of approaches and engineer construction areas limit the number of bridges which might be built. Among this series of factors, the width of the river is predominant. It seems that a river possibly can constitute a reliable obstacle only if it is at least 100 yards wide.

During World War II, a real value was attributed to large rivers as potential obstacles. Made into an "active" obstacle by an appropriate defensive concept, the river forced the attacker to use important and valuable equipment to cross it. Destruction of this equipment would have jeopardized the operation seriously. The assailant could not afford a failure. For this reason he sought to secure an overwhelming superiority of means and to plan their employment with an exceptional care.

Combatants also directed their efforts toward hasty crossings in order to avoid the great problems involved in deliberate crossings. Sometimes they sustained the momentum of their attacks to seize intact bridges and secure them immediately. Sometimes, by a bold action using the only means immediately available, they attacked without delay to surprise the enemy before he was settled in his defense.

Such extreme attitudes on the part of the assailant—bold push, immediate brusque action, and careful planning—undoubtedly emphasize the value of a great river associated to a position defense.

Technical Developments

At the end of World War II, however, the improvement of crossing equipment contested the obstacle value of rivers. Indeed, another cause of the setbacks of defensive operations seems to be the unequal balance of technical progress between assailant and defender insofar as crossing operations are concerned.

On one side the mine has reinforced the value of a river as an obstacle by activating the area close to the banks; it has had the effect of increasing the width of the obstacle.

On the other hand, the assailant had at his disposal better technical equipment enabling him to reduce the duration of critical periods in a river crossing operation. Such equipment included self-propelled assault boats delivering the first waves of infantrymen to the opposite bank, fast operated ferries and bridges, great variety of vehicle type crossing means—to include the DUKW, LVT, LCVP, LCM, amphibious tank—and airborne troops carried over the obstacle.

In sum, technical developments have made crossing operations easier but they have not, so far, improved to a great extent the value of a river as an obstacle.

Nuclear War

With the advent of nuclear weapons both fundamentals of crossing operations and technical developments have changed. In this new environment the concept of containment combat still requires the protection of areas of aviation deployment, air strips, and radars. Also the concept of containment combat still is used to gain time necessary for an effective strategic reprisal by atomic means, changing the general relative balance of forces. But now it is on a position defense combined with a large river that this containment combat seems to be fought under the most favorable conditions.

Nuclear weapons have large effects of

destruction and neutralization. However, due to the fact that they are instantaneous, these effects must be exploited immediately and this requires a speedy commitment of the means, especially armored means. But one of the main factors in an antitank defense—the obstacle—not only is *not* destroyed as such by a nuclear explosion but even more it might be improved as an obstacle. For this reason nuclear weapons give an in-

tion includes reserves so located that they could be committed in case of a penetration by armored vehicles.

Due to the fact that it remains unchanged under the effects of nuclear weapons, a river obstacle provides essential guarantees for the maintenance of strong points and the launching of counterattacks.

A deep system of obstacles would appear desirable, with:



US Army Photograph

Underwater bridge used in Korea. Modern methods reduce the value of river obstacles

creased importance to two fundamental and basically antagonistic combat factors: the armor and the obstacles.

Position Defense

In a given position defense nuclear weapons can open a breach in a defensive sector. The assailant will try to penetrate the full depth of a position defense and to exploit immediately in order to gain open space for dispersion. The defender can thwart such a maneuver by a disposition of troops in depth. This disposi-

1. Covering obstacle to delay the commitment of enemy armor.

2. Obstacles within the position itself to slow down or to canalize an enemy penetration.

3. Obstacles that permit the isolation of the rear echelons of an enemy breakthrough and make easier the attrition or the destruction of the enemy.

As a matter of fact, a large river has a twofold advantage: it can function successively as a covering obstacle and then as a canalizing obstacle. Therefore,

a large river should facilitate the maneuver of a defender who knows how to combine it with the defensive position as a whole.

The Covering Obstacle

A river which runs along the forward edge of the battle area facilitates surveillance and the laying out of an anti-infiltration screen. This screen becomes an indispensable element of a formation in which dispersion is a *must*, due to the problem of survival created by the nuclear menace. From this screen the defender might acquire targets worth being taken under atomic fire.

Passages over the river are limited in number and are further subjected to limitations in approaches and in flow of traffic. Any formation moving in the vicinity of these critical points is risking concentration, even if only because of inertia. Such remunerative targets are easy to acquire and neutralize.

In addition, a river hampers the hasty commitment of enemy armor (to include amphibious armor) if it is reinforced on the friendly bank by dense and deep minefields. Thus the dash of atomic warfare is broken down at the very start. Commitment of exploiting forces is delayed. The defender is given an opportunity for instant local reactions and for quick restoration of the situation.

However, if the enemy succeeds in securing a sizable bridgehead, then the riverline behind him separates his forces and it can be used as a kind of anvil for a countermaneuver designed to crush forces having already crossed the river. Nuclear weapons promise a high probability of destroying any bridge, either permanent or ponton. This was not so with conventional bombings, either by artillery or by aviation. From now on, the defender is capable of increasing the value of a river as an obstacle, at the proper time, by destroying the crossing facilities. Thus the defender isolates the

rear portion of an enemy bridgehead and he submits it to his counterattack.

Other Uses

What else could the defender do with atomic weapons to increase the value of a river as an obstacle? The effects of nuclear weapons on the river itself are not very well-known by us. Perhaps we might expect the formation of a large crater, upstream flooding, the temporary disappearance of the water downstream, a diversion of watercourse, or residual radiation on the water and neighboring ground. But we must not lose sight of the fact that a nuclear explosion would create important fallout. For this reason the employment of atomic weapons close to the line of contact would necessitate an accepted risk. Suffice it to say that the employment of nuclear weapons to improve the value of a river as a canalizing obstacle can be foreseen.

In any case, it seems that in containment combat a large river might play a prominent part. The fundamentals of defensive combat, in which a defense position and a river are combined, seem to impose combat on the river itself.

However, the defender must fully realize the peculiar and new problems the assailant has to face.

In order to accelerate the commitment of his forces, the assailant must strive to speed up the flow of traffic. Consequently, due to the scarcity of approaches, he must cross on a wide front. Because he wants to avoid large concentrations he is led to look for even more space for maneuver which means a longer line of departure.

Preparation

The riverline makes the atomic preparation easier because this line clearly outlines the forward edge of the enemy formation. Also it is not necessary for the defender to make a preliminary withdrawal of forces from the line of contact, thus disclosing his intentions. Nuclear

weapons will be able to crush a forward sector of defense as far as the riverline itself. The breach so created will be open to assault forces without any other crust left than the obstacle itself. Since the assailant will have to cross on a wide front with perhaps no other support than some conventional fires, he will be inclined to use a large number of preliminary fires of nuclear weapons on the riverline.

The number of nuclear weapons used will depend on the total available. It also will depend on what must be kept in reserve for future maneuvers, to sustain the momentum of the attack through the depth of the enemy position, and to intervene on targets of opportunity. In any case, due to the enormous power of nuclear weapons, the preparation always will be of short duration.

The Crossing

In order to take advantage of the surprise effect and of the power of such fires, the assailant immediately must secure the atomized area and launch a deep exploitation. The crossing means must provide for an immediate and rapid followup of combat forces. The problem is to land not only infantry but also armor on the opposite bank.

The number of infantry crossing sites probably will be easy to increase—helicopters and airplanes can be used either to reinforce crossing means or in auxiliary airborne operations. However, the standard ferry is no longer reliable enough for heavy equipment due to technical requirements which limit the number of possible ferrying sites, delay placing them in operation, and slow down the flow of traffic. Because of the requirement for speed and flow of traffic, it becomes necessary to use not only all classical means, but also every available new means. Some of these technical developments are:

Amphibious ferry—a cross-country ve-

hicle capable of moving fast on a highway. In the vicinity of the river, flotation devices can be inflated, the vehicle can enter the water by itself, and carry loads up to 20 tons across the river.

Amphibious light tank—these are already becoming organic to major elements and reserve units of some foreign armies.

Heavy helicopter—capable of carrying loads of more than 10 tons. Its development seems to be in the final stage since some models already carry more than six tons.

This initial discontinuous flow of traffic will still be insufficient for the commitment of followup echelons and for the support of the battle.

Bridges

Is it still possible to improve this flow of traffic by the classical use of bridges?

On large riverlines, bridges constitute a valuable target for nuclear weapons. In order to avoid such a menace, or at least to reduce it, perhaps the use of bridges will have to be limited to hours of darkness. With current equipment, the time required to assemble rafts after dusk and to disassemble them before dawn reduces considerably their full employment at night. For these reasons it seems necessary:

1. To increase the number of classical bridges by using their component parts during daylight.

2. To have at one's disposal bridging equipment developed especially to cope with the above considerations. This equipment should be placed in operation and withdrawn very quickly.

In addition, bridge sites should not depend on space considerations for construction areas. This problem might be solved in the near future by new equipment, the component parts of which could be prefixed on amphibious carriers.

The Difficulties

However, with existing equipment, it is quite obvious that the periods of tacti-

cal crises are to be more critical than before. For this reason a fast exploitation of the effect of nuclear weapons is doubtful.

Crossing operations are so vulnerable under such circumstances that they become very hazardous. The prominent role of a river as an obstacle in containment combat is emphasized. Equally emphasized is the ever-imperious necessity of opposing, by all available means, a surprise crossing.

The extreme difficulties involved in the crossing of a large river under conditions of atomic warfare are such that they seriously will preoccupy the defender in operations in front of his position.

Withdrawal Crossing

It must be admitted that, although the problems of crossing operations are generally well-known, the problem of withdrawal behind a river rarely is contemplated in the same detail. And yet, how delicate is a maneuver which aims at saving time in front of a riverline and also at the recuperation of the greatest part of the forces committed far ahead.

Under conditions of atomic warfare and in the present status of technical developments is such a difficult maneuver really feasible? There is no doubt that delaying operations remain indispensable to delay the contact by the enemy with the main line of resistance. They also remain indispensable to allow enough time for the organization of the position and particularly for protective field works so increasingly important for survival.

With the possible exception of a very deep covering space in front of the position, it seems impossible to rely on a maneuver consisting only of a combination of a distant nuclear interdiction and passive destructions and obstructions. In our European theater of operations, limited in size, such a maneuver could not efficiently slow down an echelon of

forces suitably equipped to overcome or to cross obstacles.

This echelon of forces, starting from behind the line of interdiction, could progress quietly without needing the support of rear echelons. These rear echelons are actually the only ones an atomic interdiction could disturb.

Therefore, the enemy progress must be slowed down by a delaying action conducted within a zone covering the position of resistance. However, when this action is conducted in front of a large river, the problem of the withdrawal of committed forces presents certain difficulties. If the enemy capabilities of bombing the crossing means are considered (not to forget bombing of ferries and rafts which may not be well-protected by an interior friendly aviation), it appears that an interdiction of the riverline is easy and efficient. During the dynamic maneuver, committed forces risk isolation in their areas; they risk annihilation.

But the danger is even more serious. Because of the desire to recover as much as possible of his forward forces, a defender will desire to avoid the destruction of his crossing means on the river until the last minute. Here is another serious risk. Armor spearheads, boldly launched by an enemy who wants to avoid a deliberate crossing at all costs, could secure bridges intact. They will have the opportunity to rush through an atomic breach, to exploit without delay, to overthrow surprised defenders, and destroy the value of the river to the defender.

Some Questions

Under such circumstances can we risk the destruction of delaying forces? Can we take the chance of a disastrous irruption of the enemy in our position? If the efficiency of atom bombing favors a short-range strategy, and if the first engagements turn quickly into piecemeal combats, should we not give up the hope of

recovering our forces committed in delaying actions?

Would it not be preferable to have them vanish, so to speak, in previously prepared defensive areas in front of the river? Then they could keep fighting and harassing the rear echelons of an enemy stopped along the river or committed on the river. Later on they might conduct guerrilla type operations.

Conclusion

It appears that defensive operations, whether delaying actions or containment combats, are now dominated by the paramount value of rivers as obstacles. However, if the defender wants to avoid, in the future, the setbacks of the past, he must not thoughtlessly and peremptorily count on rivers. He must not delude himself about their effectiveness. This effectiveness, after further developments, might well evolve again at his disadvantage.

Perhaps at present the defender also can count on additional technical developments. A permanent sheet of fire may be realizable one day, and a nuclear mine would surely provide increased capabilities.

Technical prospects as related to rivers remain dark and upsetting. Already we can perceive the classical beginning of a decreasing curve in the value of rivers as obstacles. The heavy helicopter certainly is capable of accelerating their decline.

For these reasons, to avoid being surprised by the increasing capabilities of the enemy's maneuver, the defender must ceaselessly improve his means and constantly adjust his own maneuver. It is only by a constant effort of research, thinking, and adaptation that the defender will be able to count on a major river and entrust it with a decisive role in containment combat.

The Problems of Cold War Operations

Digested by the MILITARY REVIEW from a copyrighted article by Captain T. Leaske in "The Army Quarterly" (Great Britain) July 1957.

You are a counselor; if you can command these elements to silence, and work the peace of the present, we will not hand a rope more; use your authority.

—The Tempest, Act I

IN ALL parts of the world, under all manner of conditions, the units of the British Army for the past 10 years have been engaged in what is variously described as cold war operations, duties in aid of the civil power, or, perhaps with decreasing popularity, imperial policing.

In most instances these operations have been very costly in both time and effort. Troops still are engaged in Malaya after eight years, in Kenya after four, and in Cyprus the emergency is about to enter its third year. We know that economically and

politically we can ill afford such emergencies, but how can they be shortened? Are there military weaknesses? Have we the right equipment and techniques and are our troops correctly organized and trained?

The Nature of Cold War

Civil disturbances are apt to occur almost anywhere in the world, although underdeveloped areas such as the Middle East, Africa, and Southeast Asia are undoubtedly more prone to disturbance. Thus, although we can differentiate in degree of

risk, we cannot concentrate all our effort in any one theater, nor can we base our equipment and tactics on any one type of terrain or climate. All planning for cold war operation made more difficult because of this feature.

Internal security problems are only internal in the geographical sense. External forces act in every case. Communist influence is always applied, other elements make use of such situations for their own ends, and even friends, allies, and our own nationals at times complicate the reestablishment of law and order by their activities. Thus rapid and decisive action often is frustrated and disaffections strengthened by external support, some malicious—some merely misguided.

The Phases

Every emergency goes through two phases. The first is a preparatory or political phase. This begins with a political or social discontent gradually being crystallized into specific demands upon the government. Political agitation and propaganda promote these demands and gather internal support, while external agencies provide political and often material support. Subversive activities begin, and gradually the foundations of the future terrorist organization are laid.

The importance of recognizing this phase lies in the fact that it provides an opportunity for averting the subsequent phase of terrorism. There are two ways of doing this—in the Gold Coast the demands were met; in British Guiana the disaffection was put down. Prompt enlightened action proved effective in each case. During this phase the presence of military units helps greatly both as a steadying influence in threatening situations and in supporting preventive measures with timely strength.

The terrorist phase that follows is the result of the failure of the policies pursued in the preparatory phase. The situation passes beyond the control of the normal forces of law and order and be-

comes an emergency. The main responsibility for establishing law and order falls to the military, and special legislation is evoked to assist. At this point it would be of value to touch briefly on the characteristics of the terrorists from whose activities the emergency has arisen.

Terrorist Organizations

Because the tactics of the terrorist resemble those of the guerrilla so closely, it is best to begin by pointing out the essential difference between them. The guerrilla is a uniformed member of his country's armed forces fighting a recognized enemy after a declaration of war. The terrorist is a criminal engaged in unlawful subversive activities usually involving the murder of his own people. It is important that everyone should realize this in considering the necessary severity of anti-terrorist operations.

The terrorist's aim is to destroy confidence in the forces of law and order throughout the country. He will try to inflict casualties on the security forces to demonstrate his power and to destroy their morale, and he will inflict casualties on his own people in order to coerce their assistance and ensure his own security.

Terrorist organizations have certain inherent advantages vis-à-vis the security forces. They fight either in their own country or one which is favorable to them. They have the support, willing or coerced, of the civil population. They exploit the existence of inaccessible or difficult country. They usually have the initiative during the early period of the emergency and they have the ability to disappear at will from the scene of their activities. They operate under conditions of great secrecy, and usually local knowledge and contacts provide excellent intelligence of security forces' activities. Finally, the mounting guilt of the terrorist makes him an implacable enemy who is likely to become increasingly savage and careless of life as the emergency continues.

However, it would be wrong to assume that the terrorist is invulnerable. Many of his advantages also limit him. The difficult nature of the country in which he operates imposes problems of delay, isolation, and hunger. The security forces get to know the type of country he favors and harass him there. His tactics of operating in small groups lead to difficulties in control. His measures of secrecy interfere with the passage of information and render him vulnerable to antiterrorist propaganda and rumor.

But the major weakness of the terrorist organization lies in his dependence on the civil populace. Once this link can be broken, his organization becomes as a tree without roots, and it is only a matter of time before its destruction. For this reason a great proportion of the security forces' effort must be employed to this effect. Food denial and village guards are aimed at disrupting contacts and reestablishing confidence. This is expensive in time and effort perhaps, but essential.

The Security Forces

In general, military forces can be discussed in three different categories, although the actions of all three are interrelated. The three divisions may not be accepted generally, but dealing with them in this way leads to greater clarity in deciding their roles, organization, and equipment.

The number of troops required depends on several factors—the location of the area, its population and the number of vulnerable points within it, the nature of the disaffection, and, of course, the time at which the force is applied. One thing is certain: we cannot continue to afford to have forces of considerable size committed, particularly if emergencies occur simultaneously—economy in force must be a prime factor in our considerations.

Garrison Troops

Garrison troops form the framework of cold war precautionary measures. Their

normal dispersal provides immediate support to the civil powers. The emergencies of Cyprus, Kenya, and Malaya have shown that generally there is never less than a brigade's worth of major units within close proximity to any troubled area. It would be impractical to suggest any strengthening of overseas garrisons and, in fact, if used promptly, forces of this size—in conjunction with the colonial police—should be adequate. But there are one or two features concerning garrison troops that must be stated.

First, it should be emphasized that the prime duty of a garrison unit in any station is to be prepared to enforce the peace within that station. Its training and equipment, particularly if it is not an infantry battalion, must be based on this requirement. It is entirely wrong for garrison units to have to wait until the emergency is declared before being issued suitable vehicles and equipment. This wastes valuable time, makes garrison troops appear inefficient in the eyes of the population, and defeats their entire purpose.

The training of garrison troops in internal security duties is absolutely imperative, irrespective of the arm of service to which they belong. The internal security scheme must not be the final item in the tabulated list for production during the administrative inspection. It must be made to live, and all garrison training must be based on it, even in deepest peace.

Next, there must be continuous and imaginative cooperation between the civil administration, the police, and the garrison. Social relations, mutual exchange of information, and training must all be better than in the past.

Relations with the ordinary civil population also are of great importance. The garrison must gain knowledge of local conditions, create an atmosphere of friendship, and inspire respect. In many ways the Royal Navy indicates the right line—a friendly cocktail party in the shadow

of a 6-inch gun is not a bad thing. Above all, garrison units must demonstrate their military efficiency, and there should be no need to be bashful about practicing internal security drills and exercises in public, providing they are well done and it is understood that they are part and parcel of normal army training everywhere.

The employment of civilians can be an acute embarrassment in time of emergency, for they often grow to occupy positions of trust and importance within the unit. The rule must be that only the smallest administrative increment should be allowed and that no civilian should occupy a position in the unit's operational establishment. Even this small increment should be easily dispensed with on short notice. This policy would aid security and also assist the unit to maintain its appearance of effectiveness and efficiency in spite of occasional internal weaknesses.

Finally, the structure of garrison commands abroad must be more operational in nature, less administrative, and capable of rapid development to include reinforcing units.

Containing Force Units

Units of the containing force are concerned in the security measures which have to be taken to prevent the growth of the emergency and to restore law and order within the centers of population. Generally speaking, these tasks are of a preventive nature, countering the aims of the terrorists, protecting persons and property, and supporting or even replacing the activities of the police force.

The nucleus of these forces will be the garrison units, for obvious reasons, but as the emergency develops reinforcements will be needed. For this purpose it is suggested that each theater should provide its own reserve, thus avoiding delays in transport and acclimatization and problems in reequipping. There is no need for these to be uncommitted reserves—they can be

garrison troops from unaffected areas acting in a planned subsidiary internal security role for which they have trained.

Containing force units should be ordinary infantry battalions, but there is no reason why major units of other arms should not be equally effective. They need some special equipment; numerous jeep type vehicles, excellent communications, bicycles, tracker dogs, riot equipment, tear gas, truncheons, and small arms. No heavy weapons are required except perhaps mortars in jungle country. All this equipment must be available in theater stocks.

These containing units will be acclimatized; they also should be fit and well-trained. They must have mastered the techniques of internal security duties and must be prepared to patrol, mounted or on foot, literally, as one well-known regiment found to its cost in Kenya, "till the cows come home."

The arrival of these units to reinforce the garrison will call for changes in the command structure. The obvious choice for command would appear to be the man on the spot in every case. He knows the ground and he knows the form; he has contacts with the administration and he has already established command facilities. There are other considerations, however.

The local commander may be overfamiliar with his surroundings and somewhat contemptuous of the emergency. He may be reluctant to adopt "face-losing" precautions, and he will tend to underrate the terrorists. In company with some members of the administration and the police he may resent the emergency as a personal setback and the arrival of reinforcements as a slur on his own capabilities. So the appointment of commanders must be balanced between the qualities of the "new broom" and the "old hand," and it is important that a right choice should be made.

The activities of the containing force units form the framework from which real antiterrorist action can be carried out.

Striking Force Units

No matter how effective the containing forces are, terrorists can never be knocked out purely by counterpunching. The initiative must be gained and the fight carried into the terrorists' camp.

To do this we must have infantry, and nothing else will do. The more superb the infantry the better. They need not be parachutists or commandos but their state of fitness and training must be on a par with such units. They have to meet the terrorist at his own game, on his own ground, and beat him. They may have to use the jungle, the mountains, or the swamp lands; they must not be deterred by terrain or climate. This requires battlecraft, endurance, marksmanship, and junior leadership of the highest order.

Such standards seldom can be achieved by units in isolation or without good leadership and incentives. We need specialist formations, but as the requirements of anti-terrorist operations are so essentially basic infantry tactics, these formations also will be capable of functioning in any other form of warfare.

The best size formation seems to be the brigade group, but we do not need all the clutter normally found in such a formation. Let us, therefore, call our cold war formation the Light Brigade Group. A proposed establishment is shown in the chart. With the economies in manpower achieved by cutting out supporting arms and services, we should be able to afford three of these. In the Far East one could be provided admirably by Gurkhas. The other two should be based either in the United Kingdom or elsewhere.

The United Kingdom has definite disadvantages: there is insufficient range of climate and terrain for training, and the constant distractions of home life affect rigorous training schedules and very short states of readiness. At least one of the two British brigades should be abroad, and they should be rotated.

These then would be our strategic reserve troops for striking force duties. It goes without saying that they must be 100 percent air transportable, and it must be a matter of honor between the air force and the army that they should be landed anywhere in the world within 24 hours.

The support of these brigades and the provision of heavy equipment will be based on prestocking under arrangements by overseas commands. The scales of equipment and location will be decided in relation to the area concerned.

It should be emphasized that these formations should not be used in the containing troops' role but that containing troops frequently may assist in striking force operations.

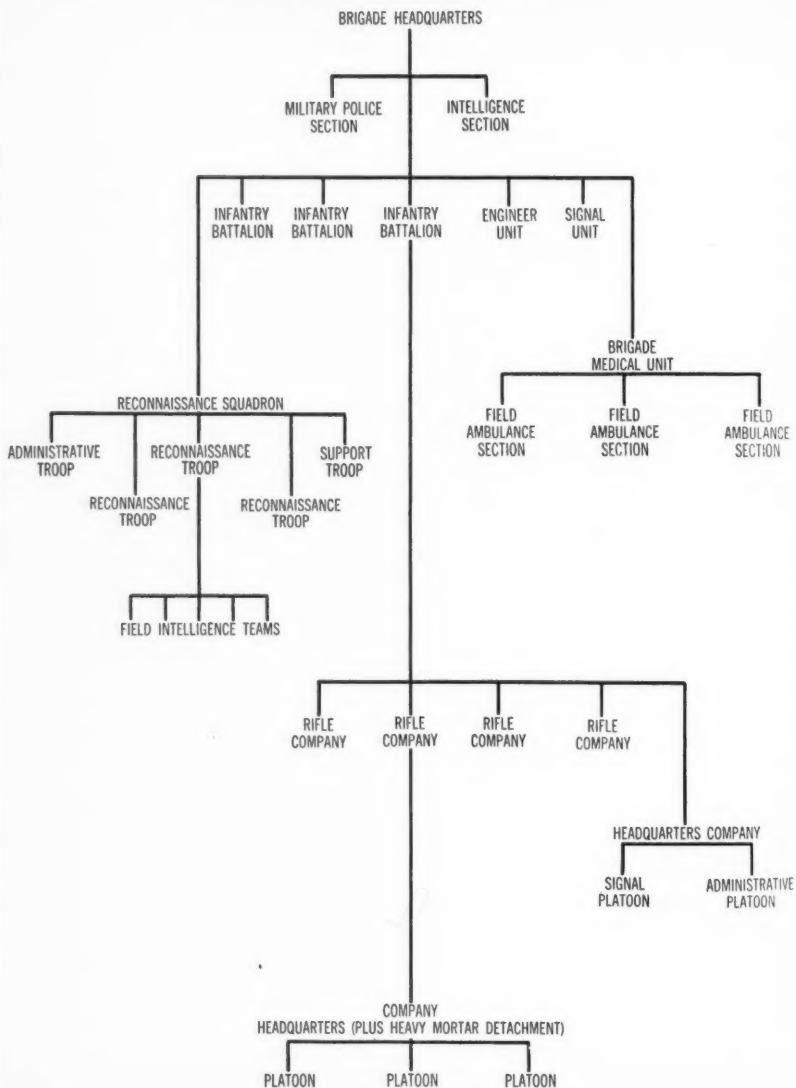
Intelligence

Success in defeating terrorism is directly proportionate to the quality of the information available about the terrorist organization. Once the picture is clear, the destruction of the organization is a comparatively straightforward military task. Therefore, the duration of the emergency is related to the effectiveness of the intelligence services; if we want to reduce time and effort, then we must increase the efficiency of intelligence.

Just as there are three legs to a stool, so there are three types of intelligence required in the cold war; and just as a stool will collapse if one leg is weak, so the security forces will fall down if one of the sources of intelligence is lacking. The agencies for political intelligence, criminal intelligence, and military intelligence must be fused effectively.

In time of emergency Britain's military intelligence element joins with the Colonial Office and Police Special Branch in Joint Intelligence Centers. These are effective, but it is recommended that they should be established now in all colonies or possible areas of emergency. Military intelligence elements should be given the facilities necessary for developing their own sources

PROPOSED ORGANIZATION OF LIGHT BRIGADE



and contacts, so that in time of emergency they are not so entirely reliant upon the police who, after all, are not trained in military intelligence requirements.

Finally, there is a need for tactical intelligence when the emergency occurs and troops are committed to antiterrorist operations. In the past, units have had to ferret out this intelligence for themselves. Some attempts have been made at specialization, and it is believed that these should be developed.

The organization of the Light Brigade Group contains provision for a reconnaissance squadron, and this unit is proposed for field intelligence tasks. The proposal is for a number of officer-led teams, specially trained and equipped according to the requirements of the terrain, assisted by local recruits—settlers, trackers, and informers—with the task of gaining information upon which operations could be mounted. The training of these teams requires a special study which probably will have to include a special intelligence course.

Staff Procedures

There is an immediate need for improvement in staff procedures. Cold war operations have become a branch of warfare quite as different from conventional war as is nuclear warfare.

There is a great field of experience to draw on and it is time that a textbook of these operations was prepared. Discussion with officers concerned in different emergencies has proved how often the lessons of one had to be relearned in another. It is not always wise to say that every emergency is different; there are both common principles and techniques. All this saves time and enables action to be taken quickly and automatically.

Administrative Problems

For operations to be effective and brief there must be no administrative delays. Therefore, the logistical implications of

emergencies in any area must be foreseen and plans and preparations made and reviewed realistically. This may mean expense in time of peace and perhaps some waste in providing facilities that are never used—such as airstrips, harborages, and dumped stocks—but these are insurance policies and if they are not needed, so much the better.

Conclusion

All over the world the British Army finds itself committed to cold war operations. These operations are a heavy strain on the resources of the country and the army. The growth of Communist influence everywhere makes it imperative that we should find some way of averting these emergencies or of bringing them quickly to a successful conclusion.

The pattern of the emergencies shows that they are best averted in the preparatory phase. Prompt and enlightened action by the colonial government is needed, but it has been seen that well-trained, alert garrison troops established at strategic points can be of great assistance.

The terrorist operations which lead to the emergency have been shown to result from the failure of the government to act suitably in the preparatory phase. The nature of terrorist operations emphasizes reliance upon support from the local population and the need for the security forces to exploit this weakness.

A study of the problems of the security forces suggests that *there is no shortcut to the end of the emergency once it has started*. But there is room for greater efficiency in dealing with it and much scope for planning and preparation in time of peace.

In detail, it is recommended that garrison troops should be better trained, equipped, and apprised of their duties. Troops used in the emergency should be divided into containing forces and striking forces, the former provided by theater

reserves, and the latter by strategically based special formations. It is emphasized that the headquarters of overseas garrisons should be more operational and capable of expansion.

Great reductions in effort can be attained by improving intelligence. Perhaps this is the key to the entire problem. The recommendations are for improvements, in time of peace, along two lines: first, in the static intelligence chain, by maintaining Joint Intelligence Centers in overseas

areas with the Colonial Office, and, second, by providing field intelligence teams to work in support of the Light Brigade Groups to obtain tactical intelligence.

Finally, it must be emphasized that military measures in themselves are never the best answer to cold war problems. The aim must be to retain the authority of the counselor by political rather than military means. Then, like the Boatswain in *The Tempest*, we need not hand a rope more—and that is the ideal situation.

Morale in a Missile Force

Digested by the MILITARY REVIEW from a copyrighted article by Robert R. Rodwell in "Aeronautics" (Great Britain) March 1958.

OF ALL the cerebation that has been applied to the operational aspects of guided missiles, very little seems to have been concerned with the human effects of their introduction into the armed services. In Great Britain these have been overlooked in the starry-eyed contemplation of well-paid, white-coated, boffin type members of a missile air force, happily dedicated to their tasks, working in air-conditioned underground burrows with highly lethal defensive or retaliatory missiles at their fingertips. In fact, objective consideration indicates that the advent of guided missiles will reduce service life to one of such tedium that it is unlikely to attract men of the caliber required in an entirely voluntary and highly technical force.

Since the government promised the abolition of National Service by 1960, there has been much woolly and generally unproductive talk on making service life sufficiently attractive to obtain the required recruits for the forces outlined by the new doctrine. Increased pay, improved living conditions, more attention to family welfare, and less routine reassignments—with its unsettling effect on family life—are among the hackneyed measures that have been discussed.

Yet nobody has come forward with a palliative for what we feel will be a basic root of discontent with future service life, that is, the sense of complete frustration that life in a missile force will engender among its personnel. Basically, inactivity will be the cause of this frustration—not inactivity in the sense that there will be little to occupy a serviceman's working day, but the inactivity of the force as a whole. It will be a static, sterile force prevented by its very nature from ever being fully exercised. There will be no indication to officers or airmen that their combined efforts are achieving anything. They will be denied the satisfaction derived from a job well-done.

The Present

In the Royal Air Force as it exists at the moment almost every member's efforts are combined to produce the resultant product—flying time for the service's aircrews, and the continuation training necessary to keep them at a high state of operational efficiency. Discounting purely domestic personnel, such as cooks, administrative workers, and medical people, all of whom will be required in a missile force, most officers and tradesmen can see

some tangible result from their labors and can derive satisfaction from these results.

The mechanic knows that people's lives depend on his skill, and his squadron's efficiency in attaining its target hours without accident certainly reflects his skill and care in the speedy location and rectification of troubles. The armorer stripping a fighter's guns knows that these will be used frequently on gunnery practice. The officers and airmen in the control tower or air traffic control center know that their efforts result in increased safety for the flyers.

In the rescue coordination centers there are hours of eventless watches, punctuated with the occasional stimulus of a large-scale rescue operation, ending either in success—with its human satisfactions—or in disappointment that lives could not be saved. In either event, there is the consciousness that one is performing a useful, worthy task.

Even the most obviously tedious job, that of airfield fireman, with its hours of sitting in a crash tender waiting for something to happen can have its rewarding moments. Sometime there is an emergency and somebody is extremely grateful that the fireman is there. Whatever the task, its incumbent knows that he is part of a living force—a *flying* air force.

The Future

Consider now the conception of a missile air force. Highly trained technicians will man batteries of ballistic bombardment missiles which promise the Eastern bloc a holocaust if it ever makes an aggressive action. If it ignores the threatened retribution and launches an attack, other technicians, manning similar batteries equipped with defensive missiles, will foil the attack sufficiently to allow the holocaust to be delivered, even if this country is itself engulfed.

Maintaining the batteries at constant readiness will entail constant work of the most tedious and unchanging kind. Mis-

siles will need to be periodically stripped down, components replaced, circuits endlessly tested. Firing drill will be practiced time and time again; there will be complex ground computers to maintain. Firing data for selected targets will be computed, the missiles on the "pads" adjusted theoretically to strike these targets if they were ever fired.

Missiles will be taken off the launchers, taken away for overhaul, and replaced by others that have been recently overhauled. Warheads will be checked constantly, fuzed, and defuzed. The action will be continuous, everything calculated to lead to an immediate firing, but a firing which, God willing, will never happen.

The efforts of many skilled men will be geared to an endless, incomplete operation. Their routine will rarely, if ever, be punctuated by an actual firing, far less by a firing of a live missile. They will be denied the privilege of accomplishing anything tangible for their efforts.

Only in the field of tactical missiles and, to a limited extent, ground-to-air missiles could actual firings take place in the narrow confines of the British Isles, and the cost is likely to be prohibitive.

An Example

On the cost of keeping missile units in training by means of live firings, it is useful to cite the experiences of the United States Air Force *Matador* squadrons now operational in Europe. These units are entirely mobile. The major proportion of their time is spent visiting launching sites scattered throughout the vast German forests where they set up the *Matadors*, go through the actions of firing them, "pack-up," and move on to the next site. Once a year each unit is deployed in turn to Wheelus Field in Libya where space permits the firing of their subsonic, winged missiles. During this annual firing camp each firing crew is limited, on the grounds of expense, to the firing of one *Matador*. This is the annual treat.

The situation will improve with the development of the *TM-76 Mace*, recoverable version of the *Matador* (MR, Sep 1958, p 77) specifically intended to allow increases in live firing practice, and thus permit more realistic and less boring continuation training of the crews. The experience of the *Matador* units shows, however, that the hope of achieving a cheap defense by the employment of missiles is a great fallacy. They are so expensive that even the United States budget cannot bear anything but the expense of the smallest number of practice firings.

No winged subsonic tactical missiles of

as a training range for all three services; a recent cut to one-quarter of the originally intended outlay has reduced its applicability to that of a training range for army missile units equipped with short-range bombardment missiles. Clearly, any missile fired over the Atlantic must be written off, and practice firings perforce limited to occasional holidays.

Defensive Missiles

The outlook for the defensive missile batteries of the Royal Air Force is hardly any brighter. Each firing will involve the expenditure of an expensive missile, and,



The *Mace* is recoverable and will permit more realistic live firing practice

the *Matador* class, which can be quite simply recovered, are known to be scheduled for the British forces, and all bombardment missiles will be ballistic. The recovery of ballistic missiles is a far more difficult procedure, and depends, of course, on one's having the land areas available for their firing and recovery. The Hebridean rocket range was originally intended

if realistic training is to be given, a drone as well, unless, as is happening in the United States, a recoverable target drone registering theoretical hits is developed. Such firings probably will be made from the present range at Aberporth out over Cardigan Bay. There would appear to be little opportunity for live firings to be made from the permanent missile sites,

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which, disposed in the direction of the threat, will be along the east coast.

In the realm of intermediate range or intercontinental ballistic missiles, the prospects of action for the operating personnel are even less promising than with tactical bombardment or ground-to-air missiles. The only area in which such missiles could be fired, and to which British forces have access, is central Australia, although training on the American missiles, which are due to be supplied to us, probably will be given in the United States.

It may well be that the difficulties of granting live firing training will be so great that the training will be confined only to the actions which lead up to firing. Certainly, if training is undertaken in Australia, firings will only be made with missiles carrying no warheads, for one can imagine the outcry of the Australian people if nuclear explosions, with their attendant dangers, were to become the rule rather than the exception in the center of their continent.

Britain will, therefore, possess a deterrent force manned by men who, if they have ever fired a missile at all, have never fired a live, operational round. They will be posted at points in Britain and possibly Africa and Asia, there to cosset endlessly their expensive charges with no exercise simulating the intended function to relieve the tedium of their existence. Feeling that their activities are devoid of result or reason, they probably will be utterly bored by the whole business. Boredom, frustration, a feeling of uselessness—all are inimical to morale.

The situation confronting the planners of the new forces is akin to that which has confronted army commanders in the past. Whereas the efforts of air force members

are fruitfully employed in support of the aircrews, obtaining for them flying time and, therefore, operational training, the soldier has no such supporting function. He is only really employed at his intended task during battle exercises.

Plenty of battle exercises have been the rule (a shell is an infinitely cheaper missile than those to come, and can be more easily expended), and for the rest of the time employment has been artificially contrived for him. Endless drill or "bull" has served to keep him occupied, working on the assumption that any activity is better for him than boredom through idleness.

A New Factor

These measures will not serve in a missile force, for the boredom will not come through underemployment but from *fruitless* employment. A new factor also appears, for the new services will be comprised of well-educated men, highly trained, and highly intelligent.

These men likely are to be more rebellious of fruitless employment than the unskilled soldier of the past. They will possess minds which will be valued by industry, as it becomes ever more technological. No more will it be possible to recruit the country's forces from the unemployed or the underskilled. The unskilled people who will become redundant with the increasing automation of the factories will not be those the services will want.

Only a psychiatrist can guess at the effect which never ending and never fulfilled preparation will have on an intelligent mind. A psychiatrist may need to be made a permanent member on every missile battery's strength. But will even this attract technicians to the task?

Leadership in Management

Digested by the MILITARY REVIEW from an article by Field Marshal Sir William Slim in the "Australian Army Journal" November 1957.

THE problems encountered at the top of any great organization, whether military or civilian, are basically the same—organization, transportation, equipment, resources, the selection of men for jobs, the use of experts, and, above all and through all, human relations. While the problems are much alike, there are certain differences between the military and the civilian approach to them and the climates in which they have to be solved.

In the army we do not talk of "management," but of "leadership." This is significant. There is a difference between leadership and management. The leader and the men who follow him represent one of the oldest, most natural, and most effective of all human relationships. The manager and those he manages are a later product with neither so romantic nor so inspiring a history. Leadership is of the spirit, compounded of personality and vision—its practice is an art. Management is of the mind, more a matter of accurate calculation, statistics, methods, timetables, and routine—its practice is a science. Managers are necessary; leaders are essential.

A good system will produce efficient managers but more than that is needed. We must find managers who are not only skilled organizers, but inspired and inspiring leaders, destined eventually to fill the highest ranks of control and direction. Such men will gather closely knit teams of subordinates like themselves and technical experts whose efficiency, enthusiasm, and loyalty will be unbeatable. This is increasingly recognized and the search for leadership is on.

What should we look for? Where are we likely to find it? When we have found it, how shall we develop and use it? Can the experience of the army be any help?

Some Differences

In this matter of leadership the fighting services have, of course, certain very marked advantages over civil life which are that:

1. The principle of personal leadership is traditional and accepted.
2. There exists a strict legal code for the enforcement of obedience to lawful direction.
3. Officers and men recognize that they are on the same side, fighting together against a common enemy.
4. Commanders do not, in war at any rate, have to pay so much regard to the financial effects of their action.

A business man might say, "If we had all that, management would indeed be simple!" Lest you think military management is too easy, I would remind you that:

1. Personal leadership exists only as long as the officers demonstrate it by superior courage, wider knowledge, quicker initiative, and a greater readiness to accept responsibility than those they lead.
2. Military command is not just a matter of bawling orders that will be obeyed for fear of punishment. Any commander's success comes more from being trusted than from being feared—from leading rather than driving.

3. Officers and men feel themselves on the same side only as long as the officers show integrity and unselfishness in all their dealings, and place the well-being of their men before their own.

4. In war the general may not be haunted by finance, but his is the responsibility for good management and economy in matters more important than money—his men's lives.

These things, not stars and crowns or

the director's limousine, are the badges of leadership anywhere.

Army Leaders

When we talk of leaders in the army what kind of men do we picture? Not the explosive old generals of the comic strips, whose complexions are indicative of blood pressure and of the consumption of port—both high, whose conversation is limited to reminiscences of Poona and of blood-sports, and whose only solution to any political or social problem is "Damn it, sir, shoot 'em." If those generals ever existed in real life they were well on the way out before I joined the army.

No, the first things we require in a leader are character and an alert mind. Of course, it will be a military mind. Every profession produces its own type of mind which shows itself in its trained approach to any given question. A scientist, for instance, if you ask him something, will probably answer:

I cannot tell you now. Come back in six months when the experiments I am engaged in will, I hope, be completed and I shall have compared my results with those of other research workers in the same field. Then I may be able to tell you.

If you ask an engineer what type of bridge should be put across a river, his answer will be, "Before I can give an indication I must have exact information. What is the width of the river, its depth, its flow? What are its banks like, its bottom, what is the highest recorded flood? Is the site accessible; is labor available? What is the climate? How much traffic will the bridge be expected to carry in the future?"

But the general cannot answer like that. He knows the information he has is far from complete; that some of it is bound to be inaccurate. He is only too well aware that there are all kinds of factors over which he has no control—the enemy, the weather, and a dozen others. Yet he must say promptly, clearly, and with every ap-

pearance of complete confidence, "We will do this."

Other professions are trained quite rightly not to reply until they have the exact and correct answer, some to give an answer made up of alternatives or possibilities. The military mind has to provide not necessarily the perfect answer but, considering what is known of the situation, one that will work. That given, the commander has to back his judgment, face the risks, force his plan through, and stand or fall by the result. It seems to me that wouldn't be a bad kind of mind to initiate and carry through enterprises in other fields—possibly even in those of commerce and industry.

Leadership

Leadership is the projection of personality. It is that combination of persuasion, compulsion, and example that makes other people do what you want them to do. If leadership is this projection of personality then the first requirement is a personality to project. The personality of a successful leader is a blend of many qualities—courage, willpower, knowledge, judgment, and flexibility of mind.

Courage is the basis of all leadership, indeed of all virtue in man or beast. It is no less in the higher than in the lower levels of command, but the greater the responsibility the more the emphasis shifts from physical to moral courage—a much rarer quality, but essential to higher leadership.

Willpower is the most obvious requirement in a leader's makeup. Without it no man can remain a leader, for he will have to force through his purpose, not only against the enemy but against the weariness of his troops, the advice of his experts, the doubts of his staff, the waverings of politicians, and the inclinations of his allies. These obstacles no doubt are duplicated in industry; willpower is as needed in the board room as in the council of war.

The main task of a leader is to make decisions, but if he does not have the judgment to make the right decisions, then the greater his strength of will and the higher his courage, the more tragic will be his mistakes. When looking for your leader make sure of his courage and his willpower, but, above all, see that he has judgment—that he is balanced.

I said he must have knowledge. A man has no right to set himself up as a leader—or to be set up as a leader—unless he knows more than those he is to lead. In a small unit—a platoon or a workshop gang—the leader should be able to do the job of any man in the outfit better than he can. That is a standard that should be required from all junior leaders.

As the leader rises higher in the scale he can no longer, of course, be expected to show such mastery of the detail of all the activities under him. A divisional commander need not know how to coax a radio set, drive a tank, preach a sermon, or take out an appendix as well as the people in his division who are trained to do those things. But he has got to know how long these jobs should take, what their difficulties are, what they need in training and equipment, and the strain they entail.

As the leader moves toward the top of the ladder, he must be able to judge between experts and technicians, and to use their advice although he will not need their knowledge. One kind of knowledge that he must always keep in his own hands—is that of men.

"Flexibility of mind" is becoming more and more important to leadership. The world, in material and scientific matters, is advancing much more rapidly than most men can keep up with. A leader is surrounded by new and changing factors. What it was wise to do yesterday may well be foolish today. Some invention, some new process, some political change may have come along overnight and the leader must adjust himself and his organization

to it speedily. The only living organisms that survive are those that adapt themselves to change. There is always the danger that determination becomes only obstinacy; flexibility, mere vacillation. Every man must work out the balance between them for himself; until he has he is no real leader.

If a man has all these qualities—courage, willpower, judgment, knowledge, and flexibility of mind—he cannot fail to be a leader in whatever walk of life he is engaged. Yet he is still not the leader we seek; he lacks one last quality—integrity. Integrity should not be so much a quality of itself as the element in which all the others live and are active, as fishes exist and move in water.

Integrity

Integrity is a combination of the old Christian virtues of honesty and unselfishness—thinking of the people we lead, before ourselves. Moral reasons, strangely enough, are the ones that both in war and commerce tell most in the long run. Apart from its spiritual aspect, this attitude—and there need be nothing soft or sloppy about it—has a practical material value. The real test of leadership is not whether your men will follow you in success, but whether they will stick by you in defeat and hardship. They won't do that unless they believe you to be honest and to have care for them.

I once had under me a battalion that had not done well in a fight. I went to see why. I found the men in the jungle, tired, hungry, dirty, jumpy, some of them wounded, sitting miserably about doing nothing. I looked for the commanding officer—for any officer; none was to be seen. Then as I rounded a bush, I realized why that battalion had failed. Collected under a tree were the officers, having a meal while the men went hungry.

Those officers had forgotten the tradition of the service that—they look after their men's wants before their own. I was

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compelled to remind them. I hope they never again forgot the integrity and unselfishness that always permeate good leadership. I have never known men fail to respond to these.

Finding Leaders

So much for the type of man we want as a leader. How, in a big organization are we to find him?

In the army we believe it is vitally important to recognize the potential leader at an early stage of his career. Then, while cultivating the natural root of leadership in him, we graft on to its growth the techniques of management. That is, we attempt to uncover the natural leaders in our own ranks—to attract them from outside as well—and then give them the chance to get out in front and lead.

I think we have done this more deliberately, more systematically, and more constantly in the army for the last 40 years than has been done in industry.

From the day he joins, a recruit is scanned constantly for signs of potential leadership. Within a few weeks, if his alertness, intelligence, education, and general character justify it, he finds himself in either the potential officers' or potential noncommissioned officers' squad. When he joins his unit, watched for leadership all the time, he may be recommended for a commission.

A selection board tests him, and, if he satisfies their requirements, he moves on either to an officers' training school for a National Service commission or a cadet college for a Regular one. Over that hurdle, the young officer joins his unit where, for some time in decent obscurity, he learns the nuts and bolts of his trade, and, equally important, gains his first real experience of leadership.

Our aim is to extract the potential officer at the start of his career and begin his grooming for leadership as soon as possible. To be too long in the ranks is not good for him—the sooner he enters

junior management the better. Responsibility breeds responsibility—the best training for leadership is leadership.

Schools, where the use of weapons and tactics are taught and staff colleges which study not only the techniques of staff work, but the principles and practice of command leadership, all help to turn the young officer into a leader. In this the annual confidential reports submitted on every officer help a great deal. A study of his reports over a period of years will give a very fair idea of an officer's character, capabilities, and what kind of post he will fill best. Eventually he may be placed on the select list of officers, whose careers are planned some years ahead to give them the kind of experience they will need to be fitted for high command. Such officers are well up in management and the very highest appointments are coming within their reach.

Of course, the pyramid narrows rapidly toward the top, and on the climb there many are dropped out. But by starting in management early, being watched all the time and given varied experience, the best men do get to the top. One of the most difficult but nonetheless important things about estimating a man's capacity is to be able to recognize his ceiling—the point beyond which he will be tested too highly.

Keeping in Touch

I have talked so far about those destined for the higher appointments, but the army in which the only leaders are the generals will win no victories. All down the line there must be leaders. We have the equivalent of the supervisors and foremen of industry; they are our warrant and noncommissioned officers. You will note we call them officers. They are very definitely a part of the management. They feel that they are, and are recognized by others as such. It has seemed to me that the position of the equivalent ranks in industry, suspended as they often are between management

and workers, must be terribly difficult. I have sometimes thought the American system where they are made to feel much more a part of management has advantages.

The greater the size of an army or any other organization, the more difficult it becomes for the leaders to make their ideas and intentions clear and vivid to all their thousands of subordinates. All kinds of ways of doing this have been attempted. There has even grown up in industry a special class of officer whose job roughly is to keep touch between management and work. I think there is some danger they may interpose rather than correct. Leadership is a very personal thing—like some germs it is weakened by passing through other bodies.

In my experience there are many things that can be done to keep touch, but if they are to be effective they must all be based on two things:

1. The headman of the army, the firm, the division, the department, the regiment, and the workshop must be known as an actual person to all under him.

2. The soldier or the employee must be made to feel he is part of the show and what he is and what he does matters to it.

The best way to get known to your men is to let them see you and hear you by going among them and talking to them. The headman should be able to walk on to any parade ground in his command or into any factory in his firm and be recognized—even if it is only "Here comes the old so-and-so." It is surprising how soldiers and workmen can use an uncomplimentary expression as an endearment.

The boss should talk to individuals as he moves about and occasionally—only occasionally, as it should be something of an event—assemble his staff and workers, mixed together for preference, and tell them something of what he is trying to do. It's not more difficult to talk to a meeting of employees than to one of shareholders

—and I believe it is worth more. To talk to men like that does not require great eloquence. Only two things are needed—to know what you are talking about and to believe it yourself. That last is important.

To make anyone feel part of a show you have to take them into your confidence. We soldiers have long grown out of the "theirs not to reason why" stage. Any intelligent man wants to know why he is doing things and what for. It is not a bad idea to tell him—let him look a bit further along the chain of which he is a link.

A good system which passes on to every man information of what is going on outside his immediate view is worth more than such things as joint consultations, which really only reach a few. Security may enter into this as it does in military matters, but a little risk with security is more than repaid by the feeling chaps get that their leaders have confidence in them, that they are let into the know, and that they belong.

Conclusion

From washing machines to electronic brains we live increasingly by technology. Technicians are vital to our industry. However, we do not make a man a general in the field because he is an expert in explosives; the most brilliant surgeon is not necessarily the best man to run a great hospital; nor the best selling author to run a publishing business. The technically trained man is not the answer to the management problem.

The only way in which the growing need for leadership in management can be met is to find the potential leader and then start his training and give him his chance to lead.

Industry never has to ask men to do the stark things demanded of soldiers, but the men employed are the same men. Instead of rifles they handle tools—instead of guns they serve machines. They have

changed their khaki and jungle-green for workshop overalls and civilian suits. But they are the same men and they will respond to leadership of the right kind as they have always done.

If management is infused with leadership these men will show their mettle in the workshop as they have on the battlefield. Like me, they would rather be led than managed. Wouldn't you?

Soviet Seapower Amphibious Assault

Digested by the MILITARY REVIEW from a copyrighted article by
J. Meister in "The Navy" (Great Britain) October 1957.

AMONG the most ignored feats of Soviet naval operations during World War II are their numerous amphibious assaults. When Winston Churchill and Lord Alanbrooke were in Moscow in 1942, Stalin stressed the necessity of an Allied invasion of Europe, and would not listen to any arguments for postponing so immense an undertaking.

The British leaders were surprised that the Russians seemed to underestimate the complexity of such operations. Actually, the Soviets already had gained some experience in amphibious assaults even before the first Allied landings in the Pacific and North Africa were launched.

Until 1941 Russia had used landing operations only occasionally—in 1717, 1719, and 1721 in Sweden; during the Napoleonic wars in the Mediterranean; and in 1916 on the Turkish coast. For this last operation the Russians used specially built landing craft and transports, surprisingly like the Allied types in service during the Second World War.

We may distinguish between three types of landing operations: the commando raid designed to destroy a limited objective and to provide intelligence; the medium-size raid, intended to eliminate a larger target or to create a temporary diversion; and the large-scale invasion to establish a new front.

World War II

In World War II the Soviets undertook numerous commando raids, mostly from

submarines and motor torpedo boats, chiefly against the German-occupied Crimea, the coasts of Romania and Bulgaria, and the islands in the Gulf of Finland. Although some of the saboteurs landed were caught, the majority got away.

Medium-size raids of the same type as the British attack on Dieppe were also quite numerous. Among the earliest amphibious operations were the abortive assaults against some of the small Finnish-held islands around Hango during the summer of 1941. More successful was an attack by a naval infantry regiment which landed in September 1941 behind the Romanian lines near Odessa and temporarily reduced Axis pressure upon this beleaguered town.

Amphibious Failures

The Soviet raid against the Finnish-held island of Someri on 8 July 1942 ended in complete failure as the Russian forces involved were too weak and cooperation between the troops landed and the supporting ships and aircraft proved inadequate. The same fate befell three Russian raids carried out between 5 and 8 October 1941 against a stretch of German-held coast near Peterhof. Another raid was made by 12 launches, 500 men, and a few women near Narva on 1 February 1944.

A Russian landing in Motovski Bay in July 1941 slowed down the German advance toward Murmansk, but the Russian

troops finally were annihilated or evacuated. When the Soviets tried to repeat this operation in the spring of 1942 they were driven back again after heavy fighting.

The first large-scale landing operation took place at the end of December 1941 against the German-held Crimea. At least two divisions crossed the narrow Kerch Strait while two others, escorted by cruisers and destroyers, landed in Feodosiya. Most of these assaults against very weak German garrisons were successful, but the Russian advance was badly led and was stopped by Axis reserves. Yet another landing at Eupatoria failed, as well as landings in Sudak Bay and near Bala-klava. Five months later the Germans attacked again, and within a few days destroyed the 20 Russian divisions landed in the meantime on the Kerch Peninsula.

A Few Successes

Small landings in 1942-43 in the Sea of Azov had no lasting results, but near Novorossisk two Russian divisions were able to land behind the German lines and hold Mount Myschako against heavy attacks. They finally forced the Germans to retreat. In November 1943 the Russians again landed in the Crimea across the Kerch Strait. After one month of heavy fighting and blockade the bridgehead near Eltingen was annihilated but another foothold near Jenikale remained in Russian hands. From there and from another bridgehead near Perekop, the Soviets reconquered the Crimea in the spring of 1944.

The final landings in the Black Sea were directed against the Danube estuary and took place during and after the Romanian capitulation in August 1944.

Baltic Landings

In the Baltic, the first large amphibious assault was directed against the Finnish islands of Teikari and Melansaari, near Vyborg. Strong Soviet forces, sup-

ported by over 100 ships including about 20 gunboats, fought from 30 June to 5 July 1944 for the possession of these islands. Weak Finnish forces repulsed the Russians three times, but finally, German and Finnish warships being unable to support their own troops, the islands had to be evacuated. The last Finns were forced to swim for it!

The largest-scale operation was the landing in the autumn of 1944 on the German-held Baltic islands. Four or five divisions of the Eighth Soviet-Estonian Army landed on 22 September 1944 on Worms Island; 2 October 1944 on Dago Island, and 5 October 1944 on Sarema Island. The brilliantly led Russian troops forced the Germans back into the very narrow Svorbe Peninsula where they resisted from 10 October to 23 November 1944. Several Russian attempts to land along the coast of the peninsula were repulsed, but for the first time in World War II Russian minesweepers and gunboats tried to shell the German positions notwithstanding the presence of German warships. Finally, the remnant of the German forces—despite support from pocket battleships and destroyers—had to evacuate the island.

Another successful landing operation was directed against the Finnish front north of Lake Ladoga. Over 100 ships transported two Soviet marine infantry brigades which landed near Tulos on 23 June 1944. The operation was supported by some gunboats and over 200 aircraft; Finnish counterattacks came too late and failed, and the Finnish front had to be withdrawn.

During October 1944 Russian troops landed near Pechenga and harassed the German retreat from northern Finland. The last successful raids were made on the East Prussian coast in April 1945 and on V-E Day on the Danish island of Bornholm.

In the meantime the Soviet Union had

received over 100 American-built, lend-lease landing craft. During the short Soviet-Japanese war in August-September 1945 these made possible a series of amphibious assaults against Japanese-held towns in Korea, the island of Sakhalin, and some of the fortified islands of the Kurils.

Types of Operations

This list—short and incomplete as it is—shows that the Russians were able and willing to undertake landings over short distances. It is surprising to find that Russian books about the naval side of the last war hardly mention naval actions, whereas page after page is filled with accounts of heroic deeds of sailors ashore. They claim to have killed German soldiers by the thousands and destroyed tanks and guns by the hundreds. The reader gets the impression that the Russian sailor did most of his fighting ashore.

Until the Russians received American-built landing craft in 1944 they had been using almost exclusively motor torpedo boats, motor launches, submarine chasers, fishing vessels, tugs, and lighters for landing operations. Obviously, these craft were not very suitable, and no heavy material could be carried. Sometimes the troops employed were almost completely untrained and often too few in numbers. Naval support for the troops landed generally was inadequate or even completely lacking; and the troops themselves were sometimes poorly led. However, the sailors landed were always able to hold out under very difficult conditions, needed very few supplies, and fought to the last.

Almost all landing operations were "short jumps"—some, like the assaults in the Kerch Strait, across only two or three miles of shallow and heavily mined waters. Compared with the Allied technique, tactics, resources, and means, Russian landing operations were primitive undertakings; but they achieved a notable amount of success, kept many Axis divisions busy,

and forced the Germans to evacuate isolated and menaced ports several times. All amphibious assaults, however, were connected directly and tactically with the fighting on land. Russian strategy, character, and material did not permit any far-reaching independent operations.

After the war Russia received over 200 German and Italian landing craft, while some of the surviving American lend-lease craft were returned. Soon afterward the Soviets started to build large numbers of modern landing craft and set up a center for amphibious training. The types of new craft which have been observed suggest that they are mostly infantry landing craft intended for short and medium jumps. Cooperation between troops, ships, and aircraft has been tested in several maneuvers. The use of merchant ships for the transport of troops and supplies still is regarded as an exception, but several large passenger ships—former German liners—are employed as troop transports, mostly in the Pacific.

The Future

It may be estimated that specially constructed landing ships and landing craft are, in fact, available to lift simultaneously about two divisions in the Pacific and in the Baltic and Black Seas, and one division in the Arctic Ocean and the Caspian Sea. Landing operations could enjoy a great deal of supporting gunfire from the numerous cruisers now available, as well as from many gunboats armed with both guns and rockets. Parachute and airborne troops also may be used in connection with seaborne landing operations.

Problems of coastal defense should, therefore, not be neglected, especially in the Scandinavian countries, Iceland, Turkey, and Japan. In wartime, some army reserves always will be needed to deal with possible Soviet landings, for nuclear weapons cannot solve all our defensive problems.

BOOKS OF INTEREST TO THE MILITARY READER

BEHIND THE SPUTNIKS. A Survey of Soviet Space Science. By F. J. Krieger. 380 Pages. Public Affairs Press, Washington, D. C. \$6.00.

By MAJ PATRICK W. POWERS, *Arty*

It is obvious that the Soviets, in their struggle for world domination, are applying their sledge hammer technique not only to terrestrial affairs, but also to the conquest of cosmic space.

This is the conclusion of Dr. Krieger after assembling this collection of articles and papers by Soviet astronautic authorities.

The survey is made from openly published Russian literature beginning in 1900 to the launching of *Sputnik*. The result is an authoritative collection of technical material that weaves a fascinating picture of Russian research and ideas on satellites, flight to the moon, atomic airplanes, television broadcasting from space stations, and problems of cosmic flight.

The chronological treatment of these subjects clearly illustrates the remarkable Soviet talent for theoretical and practical applications to the field of rockets and space technology.

This book is not an easy one to read, partly because of its sober, technical approach to astronautics.

The real significance of the book is its message to the free world: Scientific intelligence and research and development never have been confined solely in the West. The USSR has made her move in astronautics. We had better make ours.

ARMY LIFE ON THE WESTERN FRONTIER. Selections From the Official Reports Made Between 1826 and 1845 by Colonel George Croghan. Edited by Francis Paul Prucha. 187 Pages. The University of Oklahoma Press, Norman, Okla., \$4.00.

By LT COL ROBERT M. WALKER, *Arty*

For 20 years prior to the Mexican War, the author was Inspector General of the Army. The string of military bases stretching from Fort Snelling on the upper Mississippi to Fort Philip below New Orleans were his especial domain. Small, isolated, and insignificant in terms of fortification, these bases were, nevertheless, the stabilizing and moderating force in the dramatic "rise of the New West." Colonel Croghan's reports, selected and condensed in this volume, give an intimate and firsthand picture of what these western outposts were really like. Whether lashing out at unreasonable discipline or quietly commending good work, he writes with warmth and vitality.

Topographically arranged, the reports cover all phases of army life, from chaplains to sutlers, hospitals to quarters, and recruiting to rations. They also contain information on frontier conditions, Indian affairs, and other related matters. Colonel Croghan is a perceptive reporter, and his account of life in the frontier forts will be valuable and interesting to the enthusiast for west Americana as well as to the student of western history.

FOREIGN POLICY: THE NEXT PHASE.

By Thomas K. Finletter. 202 Pages. Harper & Brothers, New York. \$3.50.

By LT COL IRVING HEYMONT, *Inf*

With nuclear weapons no longer a monopoly, the problem of maintaining peace in the face of the aggressive nature of communism is a critical problem. Communist tactics have succeeded, without a shooting war, in winning the tolerance and neutrality of many of the new nations of the world.

In the face of these Communist successes, Mr. Finletter, former Secretary of the Air Force, calls for a reevaluation of our foreign policy. With incisiveness and clarity he points out that our foreign policy since the end of World War II has been primarily of defensive nature. We improvise to counter Soviet actions. Mr. Finletter pleads for an offensive foreign policy based on a rebuilding of the "Grand Alliance" of the United States and the leading Western Nations and for a new approach to the peoples of Asia.

As in his previous publications, Mr. Finletter strongly advocates the maintenance of the Strategic Air Command as the major deterrent force. Although recognizing the need for a capability to fight limited wars, he accords such forces a low priority in demands on the national economy.

In the field of disarmament Mr. Finletter persuasively advocates a campaign for a complete disarmament plan rather than disarmament by stages, in order to convince the world of our desire for peace and to place the Soviets on the defensive on this score. With mutual national suicide a possibility, the author advocates pursuing the fundamental aim of getting rid of war and cornering the Soviets into making peace.

In the Far East Mr. Finletter suggests cutting back our commitments by placing Taiwan under the United Nations and

achieving a settlement with Communist China on the basis of mutual concessions based on the best interests of the United States and not those of Chiang Kai-shek.

The book is an elaboration of the Elihu Root Lectures given at the Council of Foreign Relations in the fall of 1957. While one will not agree with all Mr. Finletter advocates, his stimulating analysis of our foreign policy makes for interesting reading and thought.

INTERNATIONAL PROPAGANDA. Its Legal and Diplomatic Control. By L. John Martin. 284 Pages. University of Minnesota Press, Minneapolis. \$5.75.

By MAJ L. GORDON HILL, Jr., *Arty*

This is the first book to be published that describes and analyzes in detail the world's defenses against international propaganda. To do this the author first covers comprehensively the history of such propaganda, including a 10-page discussion of the definitions of propaganda. Then he examines the control of international propaganda under the topics of international agreement, municipal law, and diplomacy, and briefly looks at extraterritorial control.

Actually, this book is a king-size research paper; an appendix listing source material runs 45 pages. The book is so well-documented it could serve as a general reference on the subject, particularly since it has an excellent index.

Army officers connected with or interested in international relations, national policy, public information on higher staffs, or psychological warfare will find this book interesting and rewarding. Others may find it dull and stodgy but could gain an appreciation of the subject. Its importance is shown by the fact that the United States this year is spending about 100 million dollars on international propaganda—yet many persons think this sum is inadequate.

CHANNEL DASH. By Terrence Robertson. 208 Pages. E. P. Dutton & Co., Inc., New York. \$4.00.

By CAPT BILLY M. VAUGHN, *Inf*

At 2145 on 12 February 1942 the signal lamp on the battle cruiser *Scharnhorst* blazed to life and blinked out a coded message. Across the harbor of Brest the officers of the deck aboard the *Gneisenau* and *Prinz Eugen* acknowledged the *Scharnhorst's* message to: "Execute Cerberus," "Execute Cerberus."

Thus the German Vice Admiral Ciliax put into motion one of the most remarkable naval operations of World War II. It was in this operation that the German Navy flaunted traditional British mastery of the English Channel by racing the Brest battle squadron north through the Strait of Dover to the safety of German home waters.

That the Germans could move a battle fleet through the Straits of Dover in broad daylight without the loss of a capital ship was incomprehensible to the English people. The success of this German maneuver was a hard blow to pride and prestige of an already war weary England. The clamor of indignant people suffering from a national affront dictated the establishment of a board of inquiry to determine just how such a thing could be allowed to happen.

In *Channel Dash* Mr. Robertson has set down in an interesting and readable form the events that led to Operation *Cerberus*, a chronology of the actual execution of the "dash," and the results of the board of inquiry convened to investigate the circumstances of the battle. Drawing on official action reports and eyewitness accounts the author presents a clear minute-by-minute, blow-by-blow account of both the British and German sides of the action.

Militarily, Operation *Cerberus* is a classic example of exploiting the principle of surprise with a maneuver that is

planned in detail and boldly executed. At the same time, organization and coordination pitfalls are typified by the valiant but vain efforts of the British to counter the operation.

While critical of the British planning and coordination of the defense against the "dash," Mr. Robertson is unstinting in his praise of the bravery and valor of British fighting men. His book is a tribute to tenacity and devotion to duty of these men.

Whether a casual reader, or a student of military history, *Channel Dash* is a book well-worth reading.

THE RED CROSS CONVENTIONS. By G. I. A. D. Draper. 228 Pages. Frederick A. Praeger, Inc., New York. \$6.00.

By LT COL ROBERT M. WALKER, *Arty*

This book is based on five public lectures the author delivered in 1957 at the University of London. It presents a well-balanced account of the conventions, their backgrounds, and their structure. The most outstanding provisions are highlighted—particularly those that are common to the four conventions. The author ends the discussion with his own assessment of their contribution to the modern law of warfare.

To conclude the volume, the texts of the four conventions and the Act of 1957 are printed in full, along with a list of the countries which have ratified the conventions.

Mr. Draper, a lecturer in the Faculty of Laws, King's College, London University, makes an effective and interesting presentation of the Geneva Conventions which form, according to the author, more than half of the written law of war.

AIRCRAFT COMMUNICATIONS SYSTEMS. By J. H. H. Grover. 127 Pages. The Philosophical Library, Inc., New York. \$6.00.

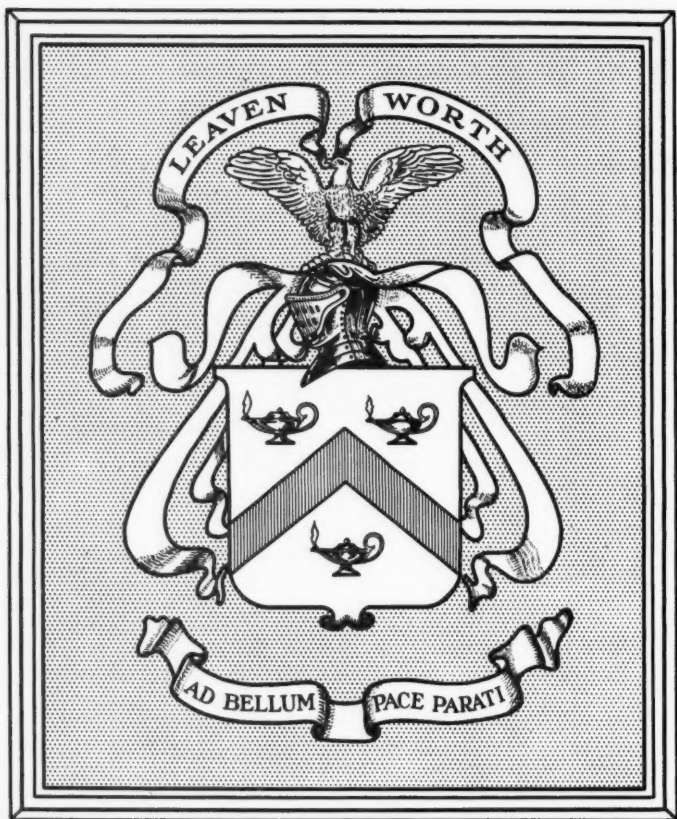
MILITARY REVIEW ANNUAL AWARD

The monthly first place award articles submitted by military writers and published in the *MILITARY REVIEW* during the period November 1957 through October 1958 inclusive have been reviewed by a faculty committee of the U. S. Army Command and General Staff College. The following article was selected to receive the Annual Award of \$350:—

The Pied Piper of Modern Military Thought,
Master Sergeant Forrest K. Kleinman, United States Army,
Information Section, Headquarters, U. S. Continental Army Command,
November 1957 issue.

The other monthly award winners considered in the Annual Award competition were:

<i>Month</i>	<i>Title and Author</i>
December	Nobody Fights Alone, <i>Col Hughes L. Ash, Infantry, Faculty, U. S. Army Command and General Staff College</i>
January	The Soviet Army Logistical System, <i>Lt Col Irving Heymont, Infantry, Faculty, U. S. Army Command and General Staff College</i>
February	The Field Army in Exploitation, <i>Maj Robert H. Allan, Jr., Corps of Engineers, Faculty, U. S. Army Command and General Staff College</i>
March	What Is Happening to Army Amphibious Know-How? <i>Lt Col Burr J. Randall, Jr., Artillery, Student, Armed Forces Staff College, Norfolk, Virginia</i>
April	Atomic Air Defense, <i>Lt Col Jack C. Evans, Jr., Artillery, Faculty, U. S. Army Command and General Staff College</i>
May	Keeping Pace With the Future—Molding the Staff, <i>Col Walter M. Vann, Artillery, Faculty, U. S. Army Command and General Staff College</i>
June	About Meetings and People, <i>Col Frank Kowalski, Jr., United States Army, Retired</i>
July	Automation and the Psychology of Logistics, <i>Capt Carl M. Guelzo, Transportation Corps, Military Traffic Management Agency</i>
August	The Estimate and the Duke of Wellington, <i>Maj Eugene C. Camp, Infantry, United States Army Element, MAAG, Vietnam</i>
September	Atomics—Characteristics and Effects, <i>Lt Col Hunter L. Stockton, Artillery, Faculty, U. S. Army Command and General Staff College</i>
October	Atomic Planning for Rear Areas, <i>Lt Col Stephen Silvasy, Artillery, Faculty, U. S. Army Command and General Staff College</i>



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